Inventor Search

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=> fil biosis hcaplus wpids
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FILE 'HCAPLUS' ENTERED AT 11:44:35 ON 10 JUN 2002
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=> d que l3;d his l4-
L1          111 SEA "LENHARD J"/AU OR "LENHARD J M"/AU OR ("LENHARD JAMES"/AU
                OR "LENHARD JAMES M"/AU OR "LENHARD JAMES MARTIN"/AU)
L2           90 SEA ("PAULIK M"/AU OR "PAULIK M A"/AU OR "PAULIK MAR"/AU OR
                "PAULIK MARK"/AU OR "PAULIK MARK A"/AU OR "PAULIK MARK
                ANDREW"/AU)
L3          175 SEA L1 OR L2



     (FILE 'BIOSIS, HCAPLUS, WPIDS' ENTERED AT 11:38:12 ON 10 JUN 2002)
L4            8 S L3 AND THERMO?
L5            3 S L3 AND HEAT?
L6            4 S L3 AND THERMO?/AB
L7            9 S L4 OR L5 OR L6
L8            6 DUP REM L7 (3 DUPLICATES REMOVED)

     FILE 'BIOSIS, HCAPLUS, WPIDS' ENTERED AT 11:44:35 ON 10 JUN 2002

=> d bib ab it 1-6

L8   ANSWER 1 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN   2002:182472 BIOSIS
DN   PREV200200182472
TI   Synthesis and evaluation of potent and selective beta3 adrenergic receptor
     agonists containing acylsulfonamide, sulfonylsulfonamide, and sulfonylurea
     carboxylic acid isosteres.
AU   Uehling, David E. (1); Donaldson, Kelly H.; Deaton, David N.; Hyman,
     Clifton E.; Sugg, Elizabeth E.; Barrett, David G.; Hughes, Robert G.;
     Reitter, Barbara; Adkison, Kim K.; Lancaster, Mary E.; Lee, Frank; Hart,
     Robert; Paulik, Mark A.; Sherman, Bryan W.; True, Timothy;
     Cowan, Conrad
CS   (1) Department of Medicinal Chemistry, GlaxoSmithKline, Research Triangle
     Park, NC, 27709: deu8774@gsk.com USA
SO   Journal of Medicinal Chemistry, (January 31, 2002) Vol. 45, No. 3, pp.
     567-583. print.
     ISSN: 0022-2623.
DT   Article
LA   English
AB   Starting from phenethanolamine aniline leads 3a and 3b, we have identified
     a series of functionally potent and selective beta3 adrenergic receptor
     (AR) agonists containing acylsulfonamide, sulfonylsulfonamide, or
     sulfonylurea groups within the aniline phenethanolamine series. In beta3,
     beta2, and beta1 AR cAMP functional assays, 3a and other right-hand side
     (RHS) carboxylate analogues were found to be full agonists that were
     modestly selective against beta1 or beta2 ARs, while analogues lacking RHS
     acid functionality were active at beta3 AR but not selective. Replacement
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of the carboxylate with acylthiazole and acylmethylsulfone gave potent, but only modestly selective, compounds. Increasing the size of the RHS sulfonamide substituent with phenyl or p-toluene afforded compounds with good potency and functional selectivity (beta3 AR pEC50 greater than 8; beta1 and beta2 AR selectivity greater than 40- and 500-fold, respectively). Our SAR studies suggest that the potency and selectivity profile of the best analogues reported here is a result of both the steric bulk and acidity of the RHS sulfonamide NH group. Although all of the analogues had a pharmacokinetic half-life of less than 2 h, acylsulfonamides 43 and 44 did show moderately low clearance in dogs. These two compounds were further evaluated by **thermographic** imaging in mice and were found to produce a robust **thermogenic** response via oral administration.

IT Major Concepts
Pharmacology

IT Chemicals & Biochemicals
acylsulfonamide; beta-3 adrenergic receptor agonist; phenethanolamine aniline; sulfonylsulfonamide; sulfonylurea carboxylic acid: isosteres

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
mouse (Muridae)

ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Rodents; Vertebrates

L8 ANSWER 2 OF 6 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-367516 [38] WPIDS
DNN N2001-268164 DNC C2001-112699
TI Non-invasive, rapid diagnostic and drug screening methods, e.g. for diagnosis of lipodystrophy, involving measurement of temperature differences using infrared **thermography**.
DC B04 P31
IN **LENHARD, J M; PAULIK, M A**
PA (GLAX) GLAXO-GROUP LTD
CYC 94
PI WO 2001035819 A1 20010525 (200138)* EN 106p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001016229 A 20010530 (200152)
ADT WO 2001035819 A1 WO 2000-US31755 20001117; AU 2001016229 A AU 2001-16229 20001117
FDT AU 2001016229 A Based on WO 200135819
PRAI US 1999-441493 19991117
AB WO 200135819 A UPAB: 20010711
NOVELTY - Methods for diagnosing lipodystrophy in a body region in vivo, by: measuring the temperature of the region using infrared **thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG; and determining the temperature of internal tissues or organs.
DETAILED DESCRIPTION - Methods are claimed for: (a) diagnosing lipodystrophy in a body region in vivo, by measuring the temperature of the region (specifically the face or the back of the neck) using infrared **thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; (b) monitoring the dyslipidemic

effect of drug therapy, by monitoring the patient's body temperature using ITG, a raise in temperature relative to an earlier value indicating a dyslipidemic effect; and (c) determining the temperature of internal tissues or organs, by replacing a portion of the skin near the tissue or organ with an infrared-invisible polymer and measuring the temperature by ITG.

USE - Method (b) is specifically used (claimed) for measuring the temperature of an animal before and after administration of a test agent, a change in temperature indicating that the agent had a **thermodynamic** effect on the tissue or organ. More generally ITG methods are useful for monitoring physiological and molecular events eliciting a **thermogenic** effect in animals (including humans), plants, tissues, cells and cell-free systems, e.g. in screening, identifying and ranking drug candidates for multiple diseases, disorders and conditions. Methods (a) and (b) are especially used (claimed) for diagnosing lipodystrophy in HIV-positive patients and/or for monitoring the dyslipidemic effect of therapy with a protease inhibitor.

ADVANTAGE - A rapid, non-invasive method for measuring real-time **thermogenesis** is provided. In particular a rapid, early method is provided for diagnosis of lipodystrophy syndrome in HIV/AIDS patients receiving protease inhibitor therapy.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic of an infrared **thermography** device suitable for use in imaging **thermogenesis** in a living animal.

Infrared camera 1
Isothermal chamber 2
Heating pad (37 deg. C) 3
Computer interface 4
Interscapular brown tissue 5

Dwg.2/46

L8 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
AN 1999:753458 HCAPLUS
DN 132:1820
TI Infrared **thermography** for measuring real-time **thermogenesis** in organisms and cells
IN **Lenhard, James Martin; Paulik, Mark Andrew**
PA Glaxo Group Limited, UK
SO PCT Int. Appl., 93 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9960630	A1	19991125	WO 1999-US10579	19990514
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9940774	A1	19991206	AU 1999-40774	19990514
EP 1086494	A1	20010328	EP 1999-924222	19990514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002516398	T2	20020604	JP 2000-550152	19990514

PRAI US 1998-85736P P 19980515
WO 1999-US10579 W 19990514

AB The present invention relates, in general, to **thermog**. and, in particular, to a method of using IR **thermog**. to monitor physiol. and mol. events that elicit a **thermogenic** response in animals (including humans), plants, tissues, cells and cell-free systems. The present method can be used for screening, identifying, and ranking drug candidates for multiple diseases, disorders and conditions. Three different inbred strains of mice, AKR/J, C57BL/6J, and SWR/J, were maintained on high and low fat diets for 14 wk before treatment with the .beta.3-adrenoceptor agonist, BRL37344. The heat produced in the intrascapular region was measured before and after 60 min treatment using IR **thermog**. The obesity prone mice, AKR/J, had a greater **thermogenic** response to BRL37344 when fed the higher fat diet. The obesity resistant mice, SWR/J, had a greater **thermogenic** response when fed the lower fat diet. There was little difference in the response of C57BL/6J mice on a high or low fat diet.

IT Animal cell line
(HUVEC, VEGF effect on; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Activity (**thermodynamic**)
Animal
Drug screening
Mouse
Thermogenesis, biological
Thermometry
(IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Apparatus
(IR **thermog**.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Uncoupling protein
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(UCP2, cloning and expression of, in yeast; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Adipose tissue
(adipocyte, screening test agent for ability to cause **thermodn**. change in sample contg.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Metabolism
(anabolic; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Adipose tissue
(brown, intrascapular, of mouse, **thermogenesis** measurement in; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Metabolism
(catabolic; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Gene
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for heterologous proteins, screening test agent for ability to cause **thermodn**. change in sample contg. cells contg.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Gene, animal
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(for uncoupling protein UCP2 and yeast transformation with; IR

thermog. for measuring real-time **thermogenesis** in organisms and cells)

IT Rat
(hair loss monitoring in; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Fats and Glyceridic oils, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**heat** prodn. in mice strains treated with BRL37344 and diets high or low in; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Feed
(high fat or low fat, **heat** prodn. in mice strains treated with BRL37344 and; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Catalysts
(immobilized, thermal anal. of reactions with; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Sexual behavior
(impotence, **thermogenic** response to pinacidil in genitalia of rats in relation to; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Drug delivery systems
(inhalants, nude mouse treatment with, thermal profile of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Medical goods
(inhalers, **thermog**. anal. of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipolysis, .beta.-adrenergic receptor agonists effect on, in adipocytes; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Animal cell
(mammalian, screening test agent for ability to cause **thermodn**. change in sample contg.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Mitochondria
(monitoring of **heat** prodn. by, in human adipocytes and yeast; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Alopecia
(monitoring of, in rats; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Evaporation
Freezing
Melting
Sublimation
(monitoring of, of compd. or compn.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Analysis
(of ability of test agent to cause **thermodn**. change; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Molecular association
(of ligand and receptor, monitoring of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Molecular cloning

(of uncoupling protein UCP2 and transformation of yeast; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Genetic engineering
(screening test agent for ability to cause **thermodn**. change in sample contg. cells from; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Animal tissue culture
Eukaryote (Eukaryotae)
Neoplasm
Plant tissue culture
(screening test agent for ability to cause **thermodn**. change in sample contg. cells of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Ligands
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(screening test agent for ability to cause **thermodn**. change in sample contg. receptor and; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Cell
Fungi
Plant cell
(screening test agent for ability to cause **thermodn**. change in sample contg.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Carbohydrates, processes
Enzymes, processes
Inorganic compounds
Lipids, processes
Nucleic acids
Organic compounds, processes
Proteins, general, processes
Receptors
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(screening test agent for ability to cause **thermodn**. change in sample contg.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Physical properties
(state, monitoring of, of compd. or compn.; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Imaging
(thermal; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Arthritis
(**thermogenesis** in; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Diet
(**thermogenesis** induced by, in humans; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Antidiabetic agents
Diabetes mellitus
(**thermogenic** effect of GW1929x on ob/ob mice in relation to; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Antiobesity agents
Obesity
(**thermogenic** effect of compds. on AKR mice in relation to; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Antibodies

RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process)
(to synthetic uncoupling protein UCP2 peptide, prepn. of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(troglitazone and related agonists effect on accumulation of, in adipocytes; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Yeast
(uncoupling protein UCP2 cloning and expression in and IR **thermog**. of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Adrenoceptors
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(.beta.3, expression of, of human, in CHO cells, isoproterenol thermal effect in relation to; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT Peroxisome proliferator-activated receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.gamma., agonists, effect of, in adipocytes and mice; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 127464-60-2, Vascular endothelial growth factor
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(HUVEC cells and nude mice treated with, **thermogenesis** in; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 250776-65-9P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(as synthetic uncoupling protein UCP2 peptide, antibodies prepn. to; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 64208-32-8, CGP 12177A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(db/db mice response to GW1929 and; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 196808-24-9, GW1929
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes and in db/db mice treated with CGP12177A; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 18559-94-9, Albuterol
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes and mouse; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 74513-77-2, RO363 74772-77-3, Ciglitazone 97322-87-7, Troglitazone 109229-58-5, Englitazone 111025-46-8, Pioglitazone 122320-73-4, BRL49653 138908-40-4, CL316243

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in adipocytes; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 83-79-4, Rotenone 370-86-5, Carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(human adipocytes and yeast treatment with; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 90730-96-4, BRL37344
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(intrascapular **thermogenesis** and wt. redn. in AKR mice treated with; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 251089-43-7, GW 473559A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ob/ob mouse treatment with, thermal effect of; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 50-24-8, Prednisolone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(redn. in **thermogenesis** in arthritis treated with; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 7683-59-2, Isoproterenol 66575-29-9, Forskolin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(thermal effect of, in CHO cells overexpressing human .beta.3 adrenergic receptor; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 33419-42-0, Etoposide
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(thermal monitoring of hair loss from, in rat pups; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 1310-73-2, Sodium hydroxide, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic** response of, with hydrochloric acid; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 7647-01-0, Hydrochloric acid, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic** response of, with sodium hydroxide; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 60560-33-0, Pinacidil
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermogenic** response to, in genitalia of rats; IR **thermog**. for measuring real-time **thermogenesis** in organisms and cells)

IT 299-42-3, Ephedrine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(**thermogenic** response to, in humans; IR **thermog**.
for measuring real-time **thermogenesis** in organisms and cells)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:601522 HCAPLUS
DN 131:294989
TI Therapeutic approaches to Type 2 diabetes mellitus
AU Rose, Michelle L.; **Paulik, Mark A.**; **Lenhard, James M.**
CS Department of Metabolic Diseases, Glaxo Wellcome, Inc., Research Triangle Park, NC, USA
SO Expert Opinion on Therapeutic Patents (1999), 9(9), 1223-1236
CODEN: EOTPEG; ISSN: 1354-3776
PB Ashley Publications
DT Journal; General Review
LA English
AB A review with 151 refs. Diabetes is a significant health care problem worldwide and its incidence is rising. Type 2 diabetes patients are at significant risk of developing addnl. major diseases, esp. obesity, hypertension, and dyslipidemia. All of these conditions are assocd. with adverse cardiovascular events including myocardial infarction, stroke, and death. Current research is focused on several distinct classes of pharmacol. targets in an effort to identify effective therapies for diabetes. Recently, several antidiabetic agents have been identified that promote anabolism, such as agonists for peroxisome proliferator activated receptor .gamma. (PPAR.gamma.) and retinoid X receptor (RXR). PPAR.gamma. and RXR are ligand activated transcription factors that form a heterodimeric complex that mediates fat cell differentiation and expression of genes involved in lipid and carbohydrate metab. PPAR.gamma. and RXR agonists, such as the thiazolidinediones (TZDs) and rexinoids, resp., improve insulin sensitivity and increase repartitioning of sugars and lipids from serum into peripheral tissues. In addn., mol. targets affecting catabolism, such as .beta.3-adrenoceptors (.beta.3-ARs) and uncoupling proteins (UCPs), are being evaluated for treating Type 2 diabetes and obesity. Agents that increase UCP and .beta.3-AR activity increase **thermogenesis** and metabolic rate, which may result in decreased fat and carbohydrate storage. Since diabetes results from a wide variety of clin. and metabolic problems arising from multiple cellular defects, it is likely that a combination of these pharmacol. approaches will be required to treat the disease. Specifically, a combination of anabolic and catabolic agents that promote fat and carbohydrate utilization in peripheral tissues (i.e., fat and muscle) may provide the greatest benefit for treating patients with diabetes.
IT Diabetes mellitus
(non-insulin-dependent; therapeutic approaches to Type 2 diabetes mellitus)
IT Antidiabetic agents
(therapeutic approaches to Type 2 diabetes mellitus)
IT Retinoid X receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(therapeutic approaches to Type 2 diabetes mellitus)
IT Peroxisome proliferator-activated receptors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.gamma.; therapeutic approaches to Type 2 diabetes mellitus)
RE.CNT 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:330865 BIOSIS
DN PREV199800330865
TI Development of infrared imaging to measure **thermogenesis** in cell culture.
AU **Paulik, Mark A.**; Hull-Ryde, Emily A.; Buckholz, Richard G.; Lancaster, Mary E.; Dallas, Walter S.; Weiel, James E.; **Lenhard, James M.**
CS Metabolic Dis., Glaxo Wellcome Inc., 5 Moore Dr., RTP, NC 27709 USA
SO FASEB Journal, (April 24, 1998) Vol. 12, No. 8, pp. A1302.
Meeting Info.: Meeting of the American Society for Biochemistry and Molecular Biology Washington, D.C., USA May 16-20, 1998 American Society for Biochemistry and Molecular Biology
. ISSN: 0892-6638.
DT Conference
LA English
IT Major Concepts
Cell Biology; Methods and Techniques
IT Parts, Structures, & Systems of Organisms
adipocyte; cell: culturing
IT Methods & Equipment
IR **thermography**: analytical method
IT Miscellaneous Descriptors
thermogenesis; Meeting Abstract
ORGN Super Taxa
Fungi: Plantae; Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
human (Hominidae); yeast (Fungi); C3H10T1/2 (Muridae)
ORGN Organism Superterms
Animals; Chordates; Fungi; Humans; Mammals; Microorganisms; Nonhuman Mammals; Nonhuman Vertebrates; Nonvascular Plants; Plants; Primates; Rodents; Vertebrates

L8 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 1998:323638 BIOSIS
DN PREV199800323638
TI Development of infrared imaging to measure **thermogenesis** in cell culture: **Thermogenic** effects of uncoupling protein-2, troglitazone, and beta-adrenoceptor agonists.
AU **Paulik, Mark A. (1)**; Buckholz, Richard G.; Lancaster, Mary E.; Dallas, Walter S.; Hull-Ryde, Emily A.; Weiel, James E.; **Lenhard, James M. (1)**
CS (1) Dep. Metabolic Diseases, GlaxoWellcome Inc., 5 Moore Drive, Research Triangle Park, NC 27709 USA
SO Pharmaceutical Research (New York), (June, 1998) Vol. 15, No. 6, pp. 944-949.
ISSN: 0724-8741.
DT Article
LA English
AB Purpose. Although the effects of **thermogenic** agents in cell culture can be measured by direct microcalorimetry, only a few samples can be analyzed over several hours. In this report, we describe a robust non-invasive technique to measure real-time **thermogenesis** of cells cultured in microtiter plates using infrared **thermography** Methods. Yeast were transformed with uncoupling protein-2 (UCP2) or exposed to carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone (FCCP) or rotenone. Adipocytes were exposed to rotenone, FCCP, cycloheximide, troglitazone, or CL316243. **Thermogenesis** was measured using infrared **thermography**. Results. **Thermogenesis**

increased after exposing yeast to the mitochondrial uncoupler, FCCP, or transforming the cells with UCP2. Further, **thermogenesis** in adipocytes was stimulated by CL316243, a beta3-adrenoceptor agonist being developed to treat obesity. The protein synthesis inhibitor, cycloheximide, did not inhibit CL316243-mediated **thermogenesis**. In contrast, the mitochondrial proton transport inhibitor, rotenone, inhibited **thermogenesis** in yeast and adipocytes. Similarly, the antidiabetic agent, troglitazone, suppressed **thermogenesis** in adipocytes. Although increased UCP synthesis resulted in increased **thermogenesis** in yeast, UCP expression did not correlate with **thermogenesis** in adipocytes. Conclusions. The results, taken together with the high resolution (0.002degreeC) and robustness (384-well format) of the approach, indicate infrared-imaging is a rapid and effective method for measuring **thermogenesis** in vitro.

IT Major Concepts
Biochemistry and Molecular Biophysics; Metabolism; Pharmacology

IT Parts, Structures, & Systems of Organisms
adipocyte: cultured

IT Chemicals & Biochemicals
carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone [FCCP]: mitochondrial uncoupler; cycloheximide; rotenone; troglitazone: **thermogenic** effects; uncoupling protein-2 [UCP2]: **thermogenic** effects; CL316243: beta-adrenoceptor agonist

IT Methods & Equipment
infrared **thermography**: measurement method

IT Miscellaneous Descriptors
biotechnology; pharmaceuticals

ORGN Super Taxa
Fungi: Plantae; Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae); yeast (Fungi)

ORGN Organism Superterms
Animals; Chordates; Fungi; Humans; Mammals; Microorganisms; Nonvascular Plants; Plants; Primates; Vertebrates

RN 97322-87-7 (TROGLITAZONE)
370-86-5 (CARBONYL CYANIDE P-(TRIFLUOROMETHOXY)PHENYLHYDRAZONE)
83-79-4 (ROTENONE)
66-81-9 (CYCLOHEXIMIDE)
138908-40-4 (CL316243)

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L1          7061 S (THERMAL? OR THERMOG? OR THERMOD?) (L) IMAG?
L2          1175 S (IR OR INFRA RED OR INFRARED) (L) (THERMOG? OR THERMOMET?)
L3          8089 S L1 OR L2
L4          2120 S THERMOGENESIS
L5             5 S L3 AND L4
L6         17766 S HEAT (L) (PROD?_)
L7         17766 S HEAT (L) (PROD?)
L8            42 S L7 AND L3
L9       2766536 S PROTEIN? OR CARBOHYDRAT? OR LIPID# OR NUCLEIC ACID# OR ENZYME
L10      2768006 S L9 OR ADIPOCYTE#
L11         1888 S (THERMOD? OR THERMOG?) (L) (CHANG? OR RESPONS?)
L12           23 S L3 AND L11
L13            6 S L8 AND L10
L14           31 S L5 OR L12 OR L13
L15           24 S L11 (L) MEASUR?
L16         8110 S L15 AND CELL# OR ADIPOCYTE?
L17            1 S L15 AND (CELL# OR ADIPOCYTE?)
L18            1 S L15 AND (ORGANISM? OR PLANT# OR FUNG?)
L19        93630 S NUCLEIC ACID?
L20            4 S L3 AND L19
L21           34 S L14 OR L17 OR L18 OR L20
L22         1042 S L9 AND L3
L23            1 S L22 AND L11
L24         1042 S L10 AND L3
L25            3 S L24 AND MEASUR?
L26           35 S L21 OR L23 OR L25
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=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 11:37:16 ON 10 JUN 2002
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FILE COVERS 1907 - 10 Jun 2002  VOL 136 ISS 24
FILE LAST UPDATED: 7 Jun 2002  (20020607/ED)

 This file contains CAS Registry Numbers for easy and accurate
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'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

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L26           35 S L21 OR L23 OR L25
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L4          2120 SEA FILE=HCAPLUS ABB=ON  PLU=ON  THERMOGENESIS/OBI
L5             5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3 AND L4
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L9       2766536 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PROTEIN?/OBI OR CARBOHYDRAT?/O
                 BI OR LIPID#/OBI OR NUCLEIC ACID#/OBI OR ENZYME#/OBI OR
                 RECEPTOR#/OBI  OR LIGAND#/OBI OR CELL#/OBI OR ORGANISM?/OBI
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                 PLANT#/OBI OR FUNG?/OBI)
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L23            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22 AND L11
L24         1042 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 AND L3
L25            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND MEASUR?/OBI
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L26 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:210330 HCAPLUS
DOCUMENT NUMBER: 136:364076
TITLE: Increased insulin sensitivity in IGF-I receptor-deficient brown adipocytes
AUTHOR(S): Mur, Cecilia; Valverde, Angela M.; Kahn, C. Ronald; Benito, Manuel
CORPORATE SOURCE: Departamento de Bioquimica y Biologia Molecular, Centro Mixto CSIC/UCM, Facultad de Farmacia, Universidad Complutense, Madrid, 28040, Spain
SOURCE: Diabetes (2002), 51(3), 743-754
CODEN: DIAEAZ; ISSN: 0012-1797
PUBLISHER: American Diabetes Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Immortalized brown adipocyte cell lines have been generated from fetuses of mice deficient in the insulin-like growth factor I receptor gene (IGF-IR-/-), as well as from fetuses of wild-type mice (IGF-IR+/+). These cell lines maintained the expression of adipogenic- and thermogenic-differentiation markers and show a multi-locular fat droplets phenotype. IGF-IR-/- brown adipocytes lacked IGF-IR protein expression;

insulin receptor (IR) expression remained unchanged as compared with wild-type cells. Insulin-induced tyrosine autophosphorylation of the IR .beta.-chain was augmented in IGF-IR-deficient cells. Upon insulin stimulation, tyrosine phosphorylation of (insulin receptor substrate-1) IRS-1 was much higher in IGF-IR-/- brown adipocytes, although IRS-1 protein content was reduced. In contrast, tyrosine phosphorylation of IRS-2 decreased in IGF-IR-deficient cells; its protein content was unchanged as compared with wild-type cells. Downstream, the assocn. IRS-1/growth factor receptor binding protein-2 (Grb-2) was augmented in the IGF-IR-/- brown adipocyte cell line. However, SHC expression and SHC tyrosine phosphorylation and its assocn. with Grb-2 were unaltered in response to insulin in IGF-IR-deficient brown adipocytes. These cells also showed an enhanced activation of mitogen-activated protein kinase (MAPK) kinase (MEK1/2) and p42/p44 mitogen-activated protein kinase (MAPK) upon insulin stimulation. In addn., the lack of IGF-IR in brown adipocytes resulted in a higher mitogenic response (DNA synthesis, cell no., and proliferating cell nuclear antigen expression) to insulin than wild-type cells. Finally, cells lacking IGF-IR showed a much lower assocn. between IR or IRS-1 and phosphotyrosine phosphatase 1B (PTP 1B) and also a decreased PTP1B activity upon insulin stimulation. However, PTP1B/Grb-2 assocn. remained unchanged in both cell types, regardless of insulin stimulation. Data presented here provide strong evidence that IGF-IR-deficient brown adipocytes show an increased insulin sensitivity via IRS-1/Grb-2/MAPK, resulting in an increased mitogenesis in response to insulin.

CC 2-6 (Mammalian Hormones)
Section cross-reference(s): 13

IT **Thermogenesis**, biological
(protein tyrosine phosphatase 1B expression and its assocn. with insulin receptor and **IRS**-1 in IGF-I receptor-deficient brown adipocytes in relation to)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:109758 HCAPLUS
DOCUMENT NUMBER: 136:291828
TITLE: **Infra-red thermography** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**
AUTHOR(S): Boccara, Martine; Boue, Christine; Garmier, Marie; De Paepe, Rosine; Boccara, Albert-Claude
CORPORATE SOURCE: UMR217, Laboratoire de Pathologie Vegetale, Paris, 75005, Fr.
SOURCE: Plant Journal (2001), 28(6), 663-670
CODEN: PLJUED; ISSN: 0960-7412
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The establishment of Erwinia amylovora harpin-induced hypersensitive response (HR) in Nicotiana sylvestris was followed by infra-red thermog. (IRT). Three to four hours after elicitation, the temp. decreased in the harpin-infiltrated zone assocd. to stomatal opening. The marked drop in temp. which reached 2.degree.C and preceded necrosis symptoms for several hours, is thus likely caused by higher transpiration. Neither of these effects was obsd. in a respiratory mutant, affected in complex I structure and function and over-expressing alternative oxidase, indicating that they are directly or indirectly mediated by mitochondrial function. However, as the HR establishment was similar in both wild type and mutant, cell

death was either uncorrelated with the obsd. epidermal changes or occurred by a different signalling pathway in the two genotypes. IRT revealed a novel aspect of plant-pathogen interactions and could be applied to screen for mutants affected in elicitor signalling and/or for respiratory mutants.

CC 11-5 (Plant Biochemistry)
Section cross-reference(s): 10

IT Erwinia amylovora
Mitochondria
Tobacco (Nicotiana sylvestris)
(**infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT Leaf
(stoma; **infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT **Imaging**
(**thermal**; **infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

IT 151438-54-9, Harpin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**infra-red thermog.** revealed a role for mitochondria in pre-symptomatic cooling during harpin-induced hypersensitive **response**)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:868945 HCAPLUS
DOCUMENT NUMBER: 136:575
TITLE: **Infrared thermography** and methods of use
INVENTOR(S): Marek, Przemyslaw A.; Trocha, Andzrej M.
PATENT ASSIGNEE(S): Marek, Przemyslaw, USA
SOURCE: U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001046471	A1	20011129	US 2001-850081	20010508

PRIORITY APPLN. INFO.: US 2000-202935P P 20000509
OTHER SOURCE(S): MARPAT 136:575

AB The present invention describes rapid noninvasive methods for measuring vasodilation or changes in blood flow in a patient following administration of at least one compd. that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase and/or at least one vasoactive agent. The method comprises the administration of at least one compd. that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase and/or at least one vasoactive agent to the patient followed by monitoring the temp. change of an area of interest using IR thermog. The present invention

provides methods for diagnosing diseases or disorders related to vasodilation and changes in blood flow, such as, sexual dysfunction, Raynaud's syndrome, inflammation, hypertension, gastrointestinal disorders and central nervous system disorders. The sexual dysfunction is preferably female sexual dysfunction and female sexual arousal. The vasoactive agents include potassium channel activators, calcium channel blockers, .alpha.-adrenergic receptor antagonists, .beta.-blockers, phosphodiesterase inhibitors, adenosine, ergot alkaloids, vasoactive intestinal peptides, prostaglandins, dopamine agonists, opioid antagonists, endothelin antagonists and thromboxane inhibitors. The present invention can also be used to screen and identify drug candidates for treating diseases, disorders and conditions resulting from vasodilation or changes in blood flow. The present invention also describes compns. comprising at least one S-nitrosothiol compd. for diagnosing, monitoring and/or treating female sexual dysfunctions.

IC ICM A61K049-00
ICS A61K031-21; A61K038-05; A61K038-06

NCL 424009100

CC 1-1 (Pharmacology)
Section cross-reference(s): 9, 14, 63

ST sexual dysfunction diagnosis therapy **IR thermog** nitrosothiol; vasoactive agent sexual dysfunction diagnosis **thermog**; nitric oxide donor vasodilation measurement **thermog**; blood flow dysfunction measurement **thermog**

IT Body temperature
Circulation
Dopamine agonists
Drug screening
Hypertension
Inflammation
Opioid antagonists
Vasodilation
(**IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Peptides, biological studies
Prostaglandins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Blood vessel, disease
(Raynaud's phenomenon; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Ion channel blockers
(calcium; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Nervous system
(central, disease; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Contraceptives
(condoms; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Digestive tract
(disease; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide

donor)
IT Sexual behavior
(disorder; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(emulsions; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Alkaloids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ergot; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(foams; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(gels; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(inhalants; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Thromboxanes
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(injections; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(liposomes; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(lotions; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Thiols (organic), biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitroso-; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(ointments, creams; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(ointments; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)
IT Drug delivery systems
(oral; **IR thermog.** for measuring vasodilation or

changes in blood flow following administration of nitric oxide donor)

IT Ion channel openers
(potassium; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Drug delivery systems
(sprays; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT **Imaging**
(**thermal**; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Drug delivery systems
(topical; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Drug delivery systems
(transurethral; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Adrenoceptor antagonists
(.alpha.-; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT Adrenoceptor antagonists
(.beta.-; **IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 375371-24-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 57564-91-7P, S-Nitrosoglutathione 375371-22-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 542-56-3, Isobutyl nitrite
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 10102-43-9, Nitric oxide, biological studies 90880-94-7, Endothelium-derived relaxing factor 125978-95-2, Nitric oxide synthase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**IR thermog.** for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 52-67-5 70-18-8, Glutathione, reactions 129-64-6, cis-5-Norbornene-

endo-2,3-dicarboxylic anhydride 7684-18-6, 1-Amino-2-methylpropane-2-thiol 61040-78-6, 2,4,6-Trimethoxybenzyl alcohol 375371-23-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(**IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 346684-19-3P 364057-10-3P 375371-28-1P 375371-30-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 56-85-9, Glutamine, biological studies 56-87-1, Lysine, biological studies 58-61-7, Adenosine, biological studies 70-26-8, Ornithine 74-79-3, L-Arginine, biological studies 74-79-3D, L-Arginine, nitrosylated derivs. 156-86-5, L-Homoarginine 156-86-5D, L-Homoarginine, nitrosylated derivs. 372-75-8, Citrulline 37221-79-7, Vasoactive intestinal peptide 51209-75-7, S-Nitrosocysteine 53054-07-2 53054-07-2D, nitrosylated derivs. 56577-02-7, S-Nitroso-N-acetylcysteine 79032-48-7, S-Nitroso-N-acetylpenicillamine 122130-63-6, S-Nitrosocaptopril 139427-42-2, S-Nitrosohomocysteine 162758-33-0, S-Nitrosocysteinylglycine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 116243-73-3, Endothelin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(antagonists; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 9025-82-5, Phosphodiesterase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

IT 9000-96-8, Arginase
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhibitors; **IR thermog**. for measuring vasodilation or **changes** in blood flow following administration of nitric oxide donor)

L26 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:736711 HCAPLUS
DOCUMENT NUMBER: 135:310994
TITLE: **Thermographic imaging** materials for heat mode recording and sulfonates and their polymers as acid generators for the materials
INVENTOR(S): Okawa, Atsuhiro
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001277731	A2	20011010	JP 2000-92008	20000329

OTHER SOURCE(S): MARPAT 135:310994

AB The thermog. materials showing high sensitivity and good storage stability have on supports (A) sulfonic acid ester derivs. I (R1 = alkyl, aryl, heterocyclic; R2 = substituent; R3, R4 = H, substituent; X = atom. group for forming ring; R2, R3, or R4 may be bonded with X and form ring) as thermal acid generators and (B) compds. whose absorptions in 360-700 nm are changed by innermol. or intermol. reaction induced by the generated acids. The thermal acid generators may be polymers having mer units bearing moiety of A and also having mer units bearing moiety of B, thereby functioning properties of A and B in 1 mol. The thermog. materials may contain IR-absorbing dyes and form images by IR laser light irradn. The thermog. materials will not contain Ag compds. or their salts.

IC ICM B41M005-30
ICS B41M005-26; C08F012-30; C08F020-38; C08F212-08; C08F212-12; C08F212-14; C08F216-14; C08F216-16; C08F216-18; C08F218-04; C08F218-08; C08F220-14; C08F220-16; C08F220-18; C08F220-28; C08F220-30; C08F220-36; C08F220-56; C08F220-58

CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Thermographic** copying
(heat mode recording materials contg. sulfonate acid generators and compds. **changing** absorption by acids)

L26 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:676314 HCAPLUS
DOCUMENT NUMBER: 135:222342
TITLE: A device for detecting specific hybridization in microarrays using temperature gradients and imaging of hybridizations labeled with a reporter dye
INVENTOR(S): Nakao, Motonao; Yamamoto, Kenji; Yoshii, Junji; Mizuno, Katsuya
PATENT ASSIGNEE(S): Hitachi Software Engineering Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1132485	A2	20010912	EP 2001-105870	20010309
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001255328	A2	20010921	JP 2000-67684	20000310
US 2002022226	A1	20020221	US 2001-802804	20010309

PRIORITY APPLN. INFO.: JP 2000-67684 A 20000310

AB The present invention detects and quantitates only specific hybridization bindings. A biochip spotted with a plurality of probe biopolymers is accommodated in a container into which a washing soln. is supplied from a liq. supplying unit. A heating block controls the temp. of the biochip according to a predetd. time pattern. An imaging device captures an image of the spot surface of the biochip at predetd. intervals. The plurality of images picked up with the pickup unit are stored in a computer. By analyzing the images for individual spots, hybridization can be detected with high reliability for every spot without being influenced by optimal hybridization temps. which differ depending upon the types of probes on the spots.

IC ICM C12Q001-68

CC 3-1 (Biochemical Genetics)

Section cross-reference(s): 9
ST biochip hybridization specificity temp gradient; **thermal** device biochip hybridization specificity; fluorescent dye reporter hybridization specificity **thermal** gradient; fluorometry **imaging** hybridization specificity **thermal** gradient
IT DNA microarray technology
Fluorometry
Heating systems
Nucleic acid hybridization
Optical imaging devices
(device for detecting specific hybridization in microarrays using temp. gradients and imaging of hybridizations labeled with reporter dye)

L26 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:43850 HCAPLUS
DOCUMENT NUMBER: 134:348462
TITLE: Can non-shivering **thermogenesis** in brown adipose tissue following NA injection be quantified by **changes** in overlying surface temperatures using **infrared thermography**?
AUTHOR(S): Jackson, D. M.; Hambly, C.; Trayhurn, P.; Speakman, J. R.
CORPORATE SOURCE: Department of Zoology, Aberdeen Centre for Energy Regulation and Obesity (ACERO), University of Aberdeen, AB24 2TZ, UK
SOURCE: Journal of Thermal Biology (2001), 26(2), 85-93
CODEN: JTBIDS; ISSN: 0306-4565
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors aimed to investigate whether infra red thermog. (IRT) can be used to measure and quantify non-shivering thermogenesis (NST) in the short-tailed field vole Microtus agrestis, by directly comparing it with a std. method, i.e., metabolic response following Noradrenaline injection (NA). Mean skin surface temp. overlying Brown adipose tissue (BAT) depot was 0.82.degree.C higher than mean surface temp. that did not overly BAT. The difference in temp. increased by 1.26.degree.C after NA was administered. Mean skin surface temp. overlying BAT increased by 0.32.degree.C after NA was administered; however, surface temp. decreased by 1.32.degree.C after saline was administered. Mean skin surface temp. overlying BAT did not change significantly between warm and cold acclimated voles; in contrast metabolic peak following NA injection significantly increased in cold acclimated voles. There was no significant correlation between change in surface temp. after NA injection and metabolic peak following NA injection. The results of this study suggest that IRT is not a sensitive enough method to measure changes in NST capacity in BAT following NA injection, or to detect changes in NST capacity induced by cold acclimation. However, IRT can distinguish between skin surfaces overlying BAT and skin surfaces that do not.
CC 2-8 (Mammalian Hormones)
ST non shivering **thermogenesis** noradrenaline vole thermog
IT Body temperature
(at skin surface; non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using **IR thermog**. in short-tailed field vole)
IT Adipose tissue
(brown; non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using **IR**

thermog. in short-tailed field vole)
IT Microtus agrestis
Thermogenesis, biological
(non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using **IR** **thermog**. in short-tailed field vole)
IT **Imaging**
(**thermal**; non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using **IR** **thermog**. in short-tailed field vole)
IT 51-41-2, Noradrenaline
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(non-shivering **thermogenesis** in brown adipose tissue following noradrenaline injection cannot be quantified by **changes** in overlying surface temps. using **IR** **thermog**. in short-tailed field vole)
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:715410 HCAPLUS
DOCUMENT NUMBER: 133:288919
TITLE: Heat-developable image-forming material and method
INVENTOR(S): Ohkawa, Atsuhiro
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000280632	A2	20001010	JP 1999-93085	19990331

OTHER SOURCE(S): MARPAT 133:288919
AB In the material contg. a compd. (A) having a formula W1OP1 (W1 = acid residue W1OH; P1 = substituent released by heat or acid) which generates an acid by the action of heat or an acid, and a compd. (B) which changes absorption at 360-900 nm by the inter- or intra-mol. reaction caused by the acid, A and/or B is a mixt. of a low-mol.-wt. and high-mol.-wt. compds. The material may contain a polymer having the acid generating part and the absorption changeable part. The material shows good storage stability and high sensitivity and recorded by low power laser without causing ablation.
IC ICM B41M005-30
ICS B41M005-26; G03F001-06
CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST heat developable **image** forming material; **thermog** material acid generator; absorption **changeable** compd **thermog** material
IT **Thermographic** copying
(heat-developable **image**-forming material contg. acid generator and absorption **changeable** compd.)

L26 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:712849 HCAPLUS
DOCUMENT NUMBER: 133:288916
TITLE: Non-silver type heat-developable image-forming material with undercoat layer containing vinylidene chloride polymer
INVENTOR(S): Ohkawa, Atsuhiro; Naoi, Takashi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000280625	A2	20001010	JP 1999-93086	19990331

OTHER SOURCE(S): MARPAT 133:288916
AB The material developed at 80-140.degree. comprises a support having an undercoat layer with thickness .gtoreq.0.3 .mu.m (total thickness on one side) on both sides contg. vinylidene chloride copolymer with .gtoreq.70 wt.% vinylidene chloride monomer as a repeating unit. The material may contain a compd. generating an acid by the action of heat or an acid and another compd. which changes absorption at 360-900 nm by the inter- or intra-mol. reaction caused by the acid. The material shows good dimensional stability and thermal shrinkage is prevented on development.
IC ICM B41M005-26
ICS B41M005-30; G03C001-675
CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **thermog** material undercoat layer vinylidene chloride polymer; heat developable **image** forming material; acid generator absorption **changeable** compd **thermog**
IT **Thermographic** copying
(non-silver type heat-developable **image**-forming material with undercoat layer contg. vinylidene chloride polymer)

L26 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:418974 HCAPLUS
DOCUMENT NUMBER: 134:112364
TITLE: Sub-single molecule determination of nonfluorescent species by scanning thermal lens microscope and its application to single-**cell measurement**
AUTHOR(S): Kitamori, Takehiko; Uchida, Marika; Egami, Akiko; Sekiguchi, Kazuya; Zheng, Jinjian; Sawada, Tsuguo; Tokeshi, Manabu; Sato, Kiichi; Kimura, Hiroko
CORPORATE SOURCE: Dep. Appl. Chem., Grad. Sch. Eng., Univ. of Tokyo, Toyko, Japan
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2000), 3922(Scanning and Force Microscopies for Biomedical Applications II), 67-72
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have developed a thermal lens microscope which indexes and detects photothermal effect at sub-single mols. level in/on liqs. and condensed

media. The thermal lens microscope can det. non-fluorescent mols. without receiving serious effects of light scattering in/on various condensed phase substances, and it can be applied to imaging of the distribution of non-fluorescent mols. by scanning on the sample. These characteristics of the thermal lens microscope are suitable for ultra sensitive anal. and imaging of biomedical substance in/on a single cell, sepn. media, and microfabricated chem. devices. We applied the thermal lens microscope to det. an ultratrace chem. species in various media.

CC 9-1 (Biochemical Methods)

ST mol detn nonfluorescent species; scanning thermal lens microscope **cell**

IT Microscopes
(Scanning thermal lens; sub-single mol. detn. of nonfluorescent species by scanning thermal lens microscope and application to single-**cell measurement**)

IT **Cell**
Imaging
Liquids
Molecules
Thermooptical effect
(sub-single mol. detn. of nonfluorescent species by scanning **thermal** lens microscope and application to single-**cell measurement**)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:335646 HCAPLUS
DOCUMENT NUMBER: 132:330589
TITLE: Electrodynamically focused thermal cycling device
INVENTOR(S): Austin, Robert H.; Cox, Edward C.; Chou, Chia-Fu
PATENT ASSIGNEE(S): Princeton University, USA
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000028313	A1	20000518	WO 1999-US26307	19991109
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6203683	B1	20010320	US 1998-188284	19981109

PRIORITY APPLN. INFO.: US 1998-188284 A 19981109

AB A device for the integrated micromanipulation, amplification, and anal. of polyelectrolytes such as DNA comprises a microchip which contains electrodes for dielectrophoresis powered by an AC signal generator, and a trapping electrode attached to a d.c. source that can be heated to specific temps. Nucleic acids can be heated and cooled to allow for denaturation, the annealing of complementary primers and enzymic reactions, as in a thermocycling reaction. After such a reaction has been

completed on the trapping electrode, the dielectrophoretic can be switched to a d.c. to release the product and direct it through a matrix for fractionation and/or anal. The device includes data anal. equipment for the control of these operations, and imaging equipment for the anal. of the products. The invention permits the efficient handling of minute samples in large nos., since reactions occur while sample material is positioned on an electrode in a microfluidic channel. Because the positioning, reactions, and release into a fractioning matrix are all integrated from the focusing wire, the need to transfer samples into different tubes is eliminated, thus increasing the efficiency and decreasing the possibility of damage to the samples.

IC ICM G01N027-26
CC 3-1 (Biochemical Genetics)
IT **Nucleic acid** amplification (method)
(DNA; electrodynamically focused thermal cycling device)
IT Apparatus
DNA sequence analysis
Dielectrophoresis
Electric circuits
Electrodes
Optical **imaging** devices
Polyelectrolytes
Seals (parts)
Sensors
Thermal cycling
(electrodynamically focused **thermal** cycling device)
IT DNA
Nucleic acids
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PRP (Properties); ANST (Analytical study); PROC (Process)
(electrodynamically focused thermal cycling device)
IT Primers (**nucleic acid**)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(electrodynamically focused thermal cycling device)
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:753458 HCAPLUS
DOCUMENT NUMBER: 132:1820
TITLE: **Infrared thermography** for **measuring** real-time **thermogenesis** in **organisms** and **cells**
INVENTOR(S): Lenhard, James Martin; Paulik, Mark Andrew
PATENT ASSIGNEE(S): Glaxo Group Limited, UK
SOURCE: PCT Int. Appl., 93 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9960630	A1	19991125	WO 1999-US10579	19990514

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,

MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9940774 A1 19991206 AU 1999-40774 19990514
EP 1086494 A1 20010328 EP 1999-924222 19990514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
JP 2002516398 T2 20020604 JP 2000-550152 19990514
PRIORITY APPLN. INFO.: US 1998-85736P P 19980515
WO 1999-US10579 W 19990514

AB The present invention relates, in general, to thermog. and, in particular, to a method of using IR thermog. to monitor physiol. and mol. events that elicit a thermogenic response in animals (including humans), plants, tissues, cells and cell-free systems. The present method can be used for screening, identifying, and ranking drug candidates for multiple diseases, disorders and conditions. Three different inbred strains of mice, AKR/J, C57BL/6J, and SWR/J, were maintained on high and low fat diets for 14 wk before treatment with the .beta.3-adrenoceptor agonist, BRL37344. The heat produced in the intrascapular region was measured before and after 60 min treatment using IR thermog. The obesity prone mice, AKR/J, had a greater thermogenic response to BRL37344 when fed the higher fat diet. The obesity resistant mice, SWR/J, had a greater thermogenic response when fed the lower fat diet. There was little difference in the response of C57BL/6J mice on a high or low fat diet.

IC ICM H01L029-04
ICS G01N007-00; G01N025-18; G01N025-08; G01N027-416; G01N001-18; G01N021-62
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 1, 13, 17, 73
ST **IR thermog thermogenesis organism cell**; fat diet adrenoceptor agonist **thermal imaging** mouse; obesity diet **thermal imaging** mouse; drug screening **IR thermog**; animal **thermal imaging**; plant **thermal imaging**
IT Animal **cell** line
(HUVEC, VEGF effect on; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Activity (thermodynamic)
Animal
Drug screening
Mouse
Thermogenesis, biological
Thermometry
(**IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Apparatus
(**IR thermog**.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Uncoupling **protein**
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(UCP2, cloning and expression of, in yeast; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Adipose tissue
(**adipocyte**, screening test agent for ability to cause

thermodn. change in sample contg.; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Metabolism
(anabolic; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Adipose tissue
(brown, intrascapular, of mouse, **thermogenesis measurement** in; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Metabolism
(catabolic; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Gene
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for heterologous **proteins**, screening test agent for ability to cause **thermodn. change** in sample contg. **cells** contg.; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Gene, animal
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(for uncoupling **protein** UCP2 and yeast transformation with; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Rat
(hair loss monitoring in; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Fats and Glyceridic oils, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**heat prodn.** in mice strains treated with BRL37344 and diets high or low in; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Feed
(high fat or low fat, **heat prodn.** in mice strains treated with BRL37344 and; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Catalysts
(immobilized, thermal anal. of reactions with; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Sexual behavior
(impotence, **thermogenic response** to pinacidil in genitalia of rats in relation to; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Drug delivery systems
(inhalants, nude mouse treatment with, thermal profile of; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Medical goods
(inhalers, **thermog.** anal. of; **IR thermog.**

for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT **Lipids**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipolysis, .beta.-adrenergic **receptor** agonists effect on, in **adipocytes**; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Animal **cell**
(mammalian, screening test agent for ability to cause **thermodn**. **change** in sample contg.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Mitochondria
(monitoring of **heat prodn**. by, in human **adipocytes** and yeast; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Alopecia
(monitoring of, in rats; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Evaporation
Freezing
Melting
Sublimation
(monitoring of, of compd. or compn.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Analysis
(of ability of test agent to cause **thermodn**. **change**; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Molecular association
(of **ligand** and **receptor**, monitoring of; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Molecular cloning
(of uncoupling **protein** UCP2 and transformation of yeast; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Genetic engineering
(screening test agent for ability to cause **thermodn**. **change** in sample contg. **cells** from; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Animal tissue culture
Eukaryote (Eukaryotae)
Neoplasm
Plant tissue culture
(screening test agent for ability to cause **thermodn**. **change** in sample contg. **cells** of; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT **Ligands**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(screening test agent for ability to cause **thermodn**. **change** in sample contg. **receptor** and; **IR thermog**. for **measuring** real-time

thermogenesis in **organisms** and **cells**)
IT **Cell**
Fungi
Plant cell
(screening test agent for ability to cause **thermodn**. **change** in sample contg.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT **Carbohydrates**, processes
Enzymes, processes
Inorganic compounds
Lipids, processes
Nucleic acids
Organic compounds, processes
Proteins, general, processes
Receptors
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(screening test agent for ability to cause **thermodn**. **change** in sample contg.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Physical properties
(state, monitoring of, of compd. or compn.; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT **Imaging**
(**thermal**; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Arthritis
(**thermogenesis** in; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Diet
(**thermogenesis** induced by, in humans; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Antidiabetic agents
Diabetes mellitus
(**thermogenic** effect of GW1929x on ob/ob mice in relation to; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Antiobesity agents
Obesity
(**thermogenic** effect of compds. on AKR mice in relation to; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Antibodies
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process)
(to synthetic uncoupling **protein** UCP2 peptide, prepn. of; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(troglitazone and related agonists effect on accumulation of, in **adipocytes**; **IR thermog**. for **measuring** real-time **thermogenesis** in

organisms and **cells**)

IT Yeast
(uncoupling **protein** UCP2 cloning and expression in and **IR thermog**. of; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Adrenoceptors
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(.beta.3, expression of, of human, in CHO **cells**, isoproterenol thermal effect in relation to; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT Peroxisome proliferator-activated **receptors**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(.gamma., agonists, effect of, in **adipocytes** and mice; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 127464-60-2, Vascular endothelial growth factor
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(HUVEC **cells** and nude mice treated with, **thermogenesis** in; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 250776-65-9P
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(as synthetic uncoupling **protein** UCP2 peptide, antibodies prepn. to; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 64208-32-8, CGP 12177A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(db/db mice **response** to GW1929 and; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 196808-24-9, GW1929
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes** and in db/db mice treated with CGP12177A; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 18559-94-9, Albuterol
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes** and mouse; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 74513-77-2, RO363 74772-77-3, Ciglitazone 97322-87-7, Troglitazone 109229-58-5, Englitazone 111025-46-8, Pioglitazone 122320-73-4, BRL49653 138908-40-4, CL316243
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect of, in **adipocytes**; **IR thermog**. for **measuring** real-time **thermogenesis** in

organisms and **cells**)

IT 83-79-4, Rotenone 370-86-5, Carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(human **adipocytes** and yeast treatment with; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 90730-96-4, BRL37344
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(intrascapular **thermogenesis** and wt. redn. in AKR mice treated with; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 251089-43-7, GW 473559A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ob/ob mouse treatment with, thermal effect of; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 50-24-8, Prednisolone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(redn. in **thermogenesis** in arthritis treated with; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 7683-59-2, Isoproterenol 66575-29-9, Forskolin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(thermal effect of, in CHO **cells** overexpressing human .beta.3 adrenergic **receptor**; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 33419-42-0, Etoposide
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(thermal monitoring of hair loss from, in rat pups; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 1310-73-2, Sodium hydroxide, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic response** of, with hydrochloric acid; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 7647-01-0, Hydrochloric acid, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(**thermogenic response** of, with sodium hydroxide; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **cells**)

IT 60560-33-0, Pinacidil
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermogenic response** to, in genitalia of rats; **IR thermog**. for **measuring** real-time **thermogenesis** in **organisms** and **c lls**)

IT 299-42-3, Ephedrine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BIOL (Biological study)
(**thermogenic response** to, in humans; **IR thermog.** for **measuring** real-time **thermogenesis** in **organisms** and **cells**)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:391650 HCAPLUS
DOCUMENT NUMBER: 129:117364
TITLE: Development of **infrared imaging** to **measure thermogenesis** in **cell** culture: **thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists
AUTHOR(S): Paulik, Mark A.; Buckholz, Richard G.; Lancaster, Mary E.; Dallas, Walter S.; Hull-Ryde, Emily A.; Weiel, James E.; Lenhard, James M.
CORPORATE SOURCE: Department of Metabolic Diseases, GlaxoWellcome Inc. Research Triangle Park, NC, 27709, USA
SOURCE: Pharmaceutical Research (1998), 15(6), 944-949
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Plenum Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Although the effects of thermogenic agents in cell culture can be measured by direct microcalorimetry, only a few samples can be analyzed over several hours. In this report, we describe a robust non-invasive technique to measure real-time thermogenesis of cells cultured in microtiter plates using IR thermog. Yeast were transformed with uncoupling protein-2 (UCP2) or exposed to carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone (FCCP) or rotenone. Adipocytes were exposed to rotenone, FCCP, cycloheximide, troglitazone, or CL316243. Thermogenesis was measured using IR thermog. Thermogenesis increased after exposing yeast to the mitochondrial uncoupler, FCCP, or transforming the cells with UCP2. Further, thermogenesis in adipocytes was stimulated by CL316243, a .beta.3-adrenoceptor agonist being developed to treat obesity. The protein synthesis inhibitor, cycloheximide, did not inhibit CL316243-mediated thermogenesis. In contrast, the mitochondrial proton transport inhibitor, rotenone, inhibited thermogenesis in yeast and adipocytes. Similarly, the antidiabetic agent, troglitazone, suppressed thermogenesis is adipocytes. Although increased UCP synthesis resulted in increased thermogenesis in yeast, UCP expression did not correlated with thermogenesis in adipocytes. The results, taken together with the high resoln. (0.002.degree.C) and robustness (384-well format) of the approach, indicate IR-imaging is a rapid and effective method for measuring thermogenesis in vitro.

CC 1-1 (Pharmacology)
Section cross-reference(s): 9
ST **thermogenesis IR imaging**; beta adrenoceptor agonist **thermogenesis IR imaging**
IT Uncoupling **protein**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(2; **thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)
IT **Imaging**
(**IR**; **thermogenic** effects of uncoupling

protein-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)

IT **Thermogenesis**, biological
(**thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)

IT Adrenoceptor agonists
(.beta.-; **thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)

IT 83-79-4, Rotenone 370-86-5, FCCP
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)

IT 66-81-9, Cycloheximide 97322-87-7, Troglitazone 138908-40-4, CL316243
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermogenic** effects of uncoupling **protein**-2, troglitazone, and .beta.-adrenoceptor agonists in **IR imaging** to **measure thermogenesis** in **cell** culture)

L26 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:383152 HCAPLUS
DOCUMENT NUMBER: 129:68787
TITLE: Mechanism and kinetics of stabilization reactions of polyacrylonitrile and related copolymers. IV. Effects of atmosphere on isothermal DSC **thermograms** and FT-**IR** spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid copolymer
AUTHOR(S): Kakida, Hideto; Tashiro, Kohji
CORPORATE SOURCE: Central Technology Research Laboratories, Mitsubishi Rayon Co., Ltd., Hiroshima, 739-0693, Japan
SOURCE: Polymer Journal (Tokyo) (1998), 30(6), 463-469
CODEN: POLJB8; ISSN: 0032-3896
PUBLISHER: Society of Polymer Science, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structure formation during the stabilization reactions of the acrylonitrile/methacrylic acid (AN/MAA) copolymer under air, O, and N was studied by an organized combination of isothermal DSC thermograms and FT-IR spectra. Under the oxidative atm. evolved heat was very large and the conjugated cyclic structure was formed as a stable structure. Particularly in pure O gas the stabilization reaction attained to the most advanced state. Under N the evolved heat was smallest and the resulted structure was thought to be a non-conjugated cyclic imine-enamine tautomerism structure.
CC 40-3 (Textiles and Fibers)
IT Acrylic fibers, properties
Acrylic fibers, properties
Synthetic polymeric fibers, properties
Synthetic polymeric fibers, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(acrylonitrile-methacrylic acid; atmosphere in relation to isothermal DSC **thermograms** and FT-**IR** spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)

IT Differential scanning calorimetry
IR spectra
Polymer morphology
(atmosphere in relation to isothermal DSC **thermograms** and FT-**IR** spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)

IT Carbon fibers, preparation
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(precursors; atmosphere in relation to isothermal DSC **thermograms** and FT-**IR** spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)

IT 25749-57-9, Acrylonitrile-methacrylic acid copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(fibers; atmosphere in relation to isothermal DSC **thermograms** and FT-**IR** spectral **changes** during stabilization reaction of acrylonitrile/methacrylic acid)

L26 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:221652 HCAPLUS
DOCUMENT NUMBER: 128:318968
TITLE: Near-IR and IR imaging in lipid metabolism and obesity
AUTHOR(S): Buice, Robert G., Jr.; Cassis, Lisa A.; Lodder, Robert A.
CORPORATE SOURCE: College Pharmacy, University Kentucky Medical Center, Lexington, KY, 40536, USA
SOURCE: Cellular and Molecular Biology (Paris) (1998), 44(1), 53-64
CODEN: CMOBEF; ISSN: 0145-5680
PUBLISHER: C.M.B. Association
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Approx. 1/3 of Americans are classified as obese. There has long been an interest in drug therapies for obesity. Interest in obesity research and in drug interventions in obesity has greatly increased since the discovery of a protein named leptin, one of apparently many competing biol. signals in energy metab. The complexity of the obesity problem demands new non-invasive and nondestructive methods for monitoring lipid metab. and energy expenditure to study the competing biol. signals and their effects. A new computer algorithm for spectrometric imaging of living subjects is used to remove artifacts arising from subject motion from spectra and images. The algorithm is sufficiently simple to be implemented easily in hardware for real-time video processing. Because the algorithm can be applied to images, thermogenesis and lipid metab. in interscapular adipose tissue can be obsd. directly in unrestrained and unanesthetized subjects using an InSb focal plane array video camera. The accuracy and precision of temp. and spectral measurements are established using lab. refs. and prototype drugs in test subjects.

CC 9-5 (Biochemical Methods)

IT Adipose tissue
Thermogenesis, biological
(direct observation of **thermogenesis** and lipid metab. in interscapular adipose tissue in unrestrained and unanesthetized subjects using **IR imaging**)

IT Lipids, biological studies
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological

study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(metab.; direct observation of **thermogenesis** and lipid metab. in interscapular adipose tissue in unrestrained and unanesthetized subjects using **IR imaging**)

L26 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:190906 HCAPLUS
DOCUMENT NUMBER: 128:305800
TITLE: **Thermal imaging** of **receptor**-activated **heat production** in single **cells**
AUTHOR(S): Zohar, Ofer; Ikeda, Masayaki; Shinagawa, Hiroyuki; Inoue, Hiroko; Nakamura, Hiroshi; Elbaum, Danek; Alkon, Daniel L.; Yoshioka, Tohru
CORPORATE SOURCE: Laboratory of Adaptive Systems, National Institute of Neurological Disorders and Stroke, Bethesda, MD, 20892-4124, USA
SOURCE: Biophysical Journal (1998), 74(1), 82-89
CODEN: BIOJAU; ISSN: 0006-3495
PUBLISHER: Biophysical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We present a novel thermal imaging method that combines both diffraction-limited spatial (.apprx.300 nm) and sampling-rate-limited time resoln., using the temp.-dependent phosphorescence intensity of the rare earth chelate Eu-TTA (europium (III) thenoyltrifluoro-acetonate). With this thermosensitive dye, we imaged intracellular heat waves evoked in Chinese hamster ovary cells after activation of the metabotropic m1-muscarinic receptor. Fast application of acetylcholine onto the cells evoked a biphasic heat wave that was blocked by atropine, and after a brief delay was followed by a calcium wave. Atropine applied by itself produced a monophasic heat wave in the cells, suggesting that its interactions with the receptor activate some intracellular metabolic pathways. The thermal imaging technique introduced here should provide new insights into cellular functions by resolving the location, kinetics, and quantity of intracellular heat prodn.
CC 9-4 (Biochemical Methods)
Section cross-reference(s): 6
ST **cell thermal imaging heat** sensitive dye; **heat prodn cell** europium thenoyltrifluoro acetonate
IT Animal **cell** line
(CHO; **thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT Stains, biological
(fluorescent, **heat** sensitive; **thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT Staining, biological
(fluorescent; **thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT Dyes
(**heat** sensitive; **thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT Temperature effects, biological
(**heat**; **thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)

IT Fluorometry
Imaging
(**thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT Muscarinic **receptors**
Receptors
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT 7440-70-2, Calcium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(intracellular; **thermal imaging** of **receptor** -activated **heat prodn.** in single **cells**)
IT 14054-87-6
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)
IT 51-55-8, Atropine, biological studies 51-84-3, Acetylcholine, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**thermal imaging** of **receptor**-activated **heat prodn.** in single **cells**)

L26 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:285781 HCAPLUS
DOCUMENT NUMBER: 126:330918
TITLE: Mechanism and kinetics of stabilization reaction of polyacrylonitrile and related copolymers. II. Relationships between isothermal DSC **thermograms** and FT-**IR** spectral **changes** of polyacrylonitrile in comparison with the case of acrylonitrile/methacrylic acid copolymer
AUTHOR(S): Kakida, Hideto; Tashiro, Kohji
CORPORATE SOURCE: Central Technology Research Laboratories, Mitsubishi Rayon Co., Ltd., Hiroshima, 739-06, Japan
SOURCE: Polym. J. (Tokyo) (1997), 29(4), 353-357
CODEN: POLJB8; ISSN: 0032-3896
PUBLISHER: Society of Polymer Science, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The relationship between thermal behavior and structural change was studied by an organized combination of isothermal DSC thermograms and FTIR spectra measured for the stabilization reaction of polyacrylonitrile (PAN) in comparison with the case of acrylonitrile/methacrylic acid (AN/MAA) copolymer. The isothermal DSC exothermic thermogram of PAN is much broader and the structural changes proceed much more slowly than the case of AN/MAA copolymer. On the stabilization of PAN, at first, some nitrile groups change into amide groups, which initiate the dehydrogenation and cyclization reactions. This dehydrogenation reaction proceeds rather faster than the cyclization. The comonomer MAA was considered to accelerate the dehydrogenation reaction more effectively than the cyclization reaction.
CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 40

L26 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:148205 HCAPLUS
DOCUMENT NUMBER: 126:179105
TITLE: Heat-mode **thermal**-transfer **image receptor**
INVENTOR(S): Maejima, Katsumi; Toshima, Shizuka; Takeda, Katsuyuki
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09001951	A2	19970107	JP 1995-178046	19950621

AB The light-heat conversion-type receptor comprises a support with elastic modulus .ltoreq. 100 kg/mm2 and an image-receiving layer formed thereon. The support may be made of a material selected from 1,2-polybutadiene, polyurethane, soft poly(vinyl chloride), undrawn polypropylene, low d. polyester, and undrawn nylon. The support has a thickness .ltoreq.25 .mu.m. The receptor has a releasable support which is formed on the back side of the support through an intermediate layer during a conveying/exposure process and is released followed by transferring the image to a permanent support in a transferring process. The image formed on the image-receiving layer of the material can be transferred onto permanent supports and the material gives high resoln. images useful for color proofs. Thus, a soft poly(vinyl chloride) film was coated with a compn. contg. poly(vinyl acetal) resin and poly(Me methacrylate) particles to give a receptor sheet.

IC ICM B41M005-40
ICS B41M005-26; G03F003-10; G03F007-004; G03F007-105; G03F007-11

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST heat mode thermal transfer printing **receptor**; support elastic modulus thermal transfer **receptor**

IT Optical filters
(**heat**-mode-melting thermal-transfer printing **receptor** useful in **prodn**. of color proofs)

IT Thermal-transfer printing
(**receptors**; **heat**-mode-melting thermal-transfer printing **receptor** useful in **prodn**. of color proofs)

IT Polyamides, uses
Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(support; **heat**-mode-melting thermal-transfer printing **receptor** useful in **prodn**. of color proofs)

IT 107194-54-7, Ethylene-vinyl acetate-vinyl chloride graft copolymer
RL: DEV (Device component use); USES (Uses)
(**heat**-mode-melting thermal-transfer printing **receptor** useful in **prodn**. of color proofs)

IT 9002-86-2, Poly(vinyl chloride) 9002-88-4, Polyethylene 9003-07-0, Polypropylene 25038-59-9, Poly(ethylene terephthalate), uses 26160-98-5, 1,2-Polybutadiene
RL: DEV (Device component use); USES (Uses)
(support; **heat**-mode-melting thermal-transfer printing **receptor** useful in **prodn**. of color proofs)

L26 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:52483 HCAPLUS
DOCUMENT NUMBER: 124:88085
TITLE: Mechanism and kinetics of stabilization reaction of polyacrylonitrile and related copolymers. I. Relationship between isothermal DSC **thermogram** and FT/**IR** spectral **change** of an acrylonitrile/methacrylic acid copolymer
AUTHOR(S): Kakida, Hideto; Tashiro, Kohji; Kobayashi, Masamichi
CORPORATE SOURCE: Central Res. Lab., Mitsubishi Rayon Co., Ltd, Hirosima, 739-06, Japan
SOURCE: Polym. J. (Tokyo) (1996), 28(1), 30-4
CODEN: POLJB8; ISSN: 0032-3896
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The relationship between thermal behavior and structural change was clarified for the first time by an organized combination of isothermal DSC thermogram and FTIR spectra measured for the stabilization reaction of an acrylonitrile-methacrylic acid (I) copolymer. In an early stage of the isothermal exothermic thermogram measured by DSC under air, a flat region or the induction period of the cyclic structure formation was found to exist, which is immediately followed by the two stages of steep heat evolution and the slow heat release. Based on the IR spectral changes obsd. during this thermal reaction, the induction stage was found to be assocd. with the reaction of I groups with the adjacent nitrile groups and the steep heat evolution region with the propagation of the cyclic structure and dehydrogenation of the polyacrylonitrile (PAN) chain sequences to give an unsatd. ladder structure. An activation energy for this initiation reaction of the cyclic structure formation was evaluated to be .apprx.26 kcal/mol by an Arrhenius plot.

CC 35-8 (Chemistry of Synthetic High Polymers)

IT Carbon fibers, miscellaneous
RL: MSC (Miscellaneous)
(mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

IT **Infrared** spectrometry
(Fourier-transform, mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**
)

IT Calorimetry
(differential scanning, mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**
)

IT 25749-57-9, Acrylonitrile-methacrylic acid copolymer
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(mechanism and kinetics of stabilization of acrylonitrile-methacrylic acid copolymer using relationship between isothermal DSC **thermogram** and FTIR spectral **changes**)

L26 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:899451 HCAPLUS
DOCUMENT NUMBER: 123:322055
TITLE: **Thermographic** measurement of temperature **change** during resin composite polymerization in vivo
AUTHOR(S): Hussey, D. L.; Biagioni, P. A.; Lamey, P. -J.
CORPORATE SOURCE: School Clinical Dentistry, Queen's University Belfast, Belfast, BT12 6BP, UK

SOURCE: J. Dent. (1995), 23(5), 267-75
CODEN: JDENAB; ISSN: 0300-5712
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An IR thermog. technique was used for non-invasive monitoring of temp. changes during polymn. of resin composite by measuring the infra-red emission from the surfaces of resin composite restorations during photocuring. In this study 10 patient volunteers had resin composite restorations placed in upper incisor teeth and during photocuring the temp. rise within the composite was measured using the Thermovision 900 infra-red scanning system. The results demonstrate that the exotherm is almost instantaneous, occurring as soon as the light source is activated and rising to a peak at approx. 30 s before leveling off. The measurements suggest that a max. temp. increase of 12.degree. could occur, although this may only be for a short period (<15 s). The range of temp. rise measured in this study (mean 5.4.degree. .+-. 2.5.degree.) would suggest that the pulp may be endangered by the temp. rise which occurs during resin composite polymn. in vivo.

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 38

IT Light
(**IR thermog**. measurement of temp. **change** during in vivo photochem. polymn. of dental composites)

IT **Thermographic** copying
(**IR, IR thermog**. measurement of temp. **change** during in vivo photochem. polymn. of dental composites)

IT Dental materials and appliances
(composites, **IR thermog**. measurement of temp. **change** during in vivo photochem. polymn. of dental composites)

IT Crosslinking
Polymerization
(photochem., **IR thermog**. measurement of temp. **change** during in vivo photochem. polymn. of dental composites)

IT 150104-65-7, Vitrebond 153700-24-4, Herculite XRV
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**IR thermog**. measurement of temp. **change** during in vivo photochem. polymn. of dental composites)

L26 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:318805 HCAPLUS
DOCUMENT NUMBER: 122:150256
TITLE: Factors affecting the spectral response in a TG/FT-IR experiment
AUTHOR(S): Marini, A.; Berbenni, V.; Capsoni, D.; Riccardi, R.; Zerlia, T.
CORPORATE SOURCE: Dipartimento di Chimica Fisica, Universita di Pavia, Pavia, 27100, Italy
SOURCE: Appl. Spectrosc. (1994), 48(12), 1468-71
CODEN: APSPA4; ISSN: 0003-7028
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors discuss situations where thermogravimetric/FTIR (TG/FTIR) plots are obtained which differ substantially from the expected ones. The most common of these situations involves samples that release atm. components (H2O, CO2) at low temps. The phenomena are mainly related to the purging action of the carrier gas, which strongly influences the spectroscopic portion of the TG/FTIR plot. Such an influence, as well as the different situations originating from it, it is discussed and

explained from an analogy with the operational mode of a conventional dispersive spectrometer.
CC 79-1 (Inorganic Analytical Chemistry)
Section cross-reference(s): 73
ST TG FTIR spectral **response**; **thermogravimetry** FTIR spectral **response**; **IR** Fourier TG spectral **response**
IT **Thermogravimetric** analysis
(factors affecting spectral **response** in a TG/FT-**IR** expt.)

L26 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:246571 HCAPLUS
DOCUMENT NUMBER: 122:20627
TITLE: Composite recording medium capable of having both transferred printing **image** and **thermal** recording **image**
INVENTOR(S): Danjo, Kotaro; Shimada, Naoki
PATENT ASSIGNEE(S): Dainippon Printing Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06135145	A2	19940517	JP 1992-312949	19921028

AB The title recording medium has on its sheet substrate a thermal recording layer and a transparent transferred ink receiving layer, wherein the recording on the thermal recording layer is effected by changing the recording layer between transparent and opaque states. Manuf. of the composite recording medium is also claimed.
IC ICM B41M005-26
ICS B41M005-36
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT **Thermographic** copying
(by **changing** transparency of thermal recording layer on composite recording medium)
IT Recording materials
(composite recording medium capable of having both transferred printing **image** and **thermal** recording **image**)

L26 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1994:422612 HCAPLUS
DOCUMENT NUMBER: 121:22612
TITLE: Sublimation-type thermal-transfer **receptor** sheets
INVENTOR(S): Kamimura, Hiroyuki; Mochizuki, Hidehiro; Ariga, Yutaka
PATENT ASSIGNEE(S): Ricoh Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 06024155	A2	19940201	JP 1992-182332	19920709
JP 3137747	B2	20010226		

AB The receptor sheets comprise a substrate coated with a receptor layer contg. a dyeing resin made of a hardened product of active H-contg. resins and isocyanates, a heat-releasable resin, and a lubricant which is unreactive with isocyanates. The sheets prevent melt-adhesion to transfer sheets, trouble in feeding, and wrinkling in n-mode recording process and provide high-d. transferred images.

IC ICM B41M005-38

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST sublimation **thermal** transfer **receptor** sheet; **image** receiving layer **receptor** sheet; dyeing resin **receptor** sheet; isocyanate hardened **product** **receptor** sheet; **heat** releasable resin **receptor** sheet; lubricant **thermal** transfer **receptor** sheet

IT Polyesters, uses
Urethane polymers, uses
RL: USES (Uses)
(**thermal**-transfer sheet **image**-receiving layer contg.)

IT Printing, nonimpact
(**thermal**-transfer, sheets, sublimation, **receptor** sheets, with lubricant-contg. **image**-receiving layer)

IT 127579-53-7, Coronate L-VAGH copolymer
RL: USES (Uses)
(**thermal**-transfer sheet **image**-receiving layer contg.)

L26 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:440316 HCAPLUS

DOCUMENT NUMBER: 117:40316

TITLE: Effects of isoflurane on myocardial ischemic area. A thermographic study

AUTHOR(S): Ishikawa, Takehiko

CORPORATE SOURCE: Sch. Med., Hokkaido Univ., Sapporo, 060, Japan

SOURCE: Junkan Seigyo (1992), 13(1), 113-24
CODEN: JUSEE7; ISSN: 0389-1844

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB It is still controversial if isoflurane produces a coronary steal and deteriorates acute myocardial ischemia. The author evaluated the effects of isoflurane on myocardial ischemia in an exptl. model of acute myocardial ischemia (AMI), using a thermog. imaging system. Twenty-five mongrel dogs were anesthetized with isoflurane. A left thoracotomy was performed and a small branch of the left coronary artery (LAD) was dissected free from the surrounding tissue. AMI was produced by clamping the exposed section of LAD. Thermal images of myocardium were recorded at a rate of 30 images per s. Each image was analyzed on an engineering work station, and a colder spot of the myocardium resulting from clamping was defined as a Thermog. Detd. Myocardial Ischemic Area (TDMIA). After the surgical prepn., the size of TDMIA at 1 MAC isoflurane served as control (100%). Then, changes of TDMIA, myocardial pH and hemodynamic variables at 0.5, 1.0, 1.5, 2.0 and 2.5 MAC of isoflurane were evaluated. After the expt. histopathol. changes of ischemic myocardium around TDMIA were also examd. Well-defined TDMIAs were obtained in all dogs after LAD clamping. TDMIA decreased to 66.7% of the control value by 0.5 MAC isoflurane, whereas it increased to 219% of the control value by 2.0 MAC isoflurane. I.v. phenylephrine administration (2 .mu.g/kg) at 2.0 MAC isoflurane

increased arterial blood pressure and shrank TDMIA to the control level. Myocardial pH at the center of TDMIA decreased from 7.10 to 6.87 after LAD clamping and remained unchanged throughout the study, whereas myocardial pH at the limb of TDMIA changed according to the size of TDMIA. Histopathol. findings revealed a transmural degeneration of cells which was coincident with TDMIAs. TDMIA anal. can demonstrate real-time changes of AMI in beating heart quant. and continuously. The results indicate that isoflurane may deteriorate AMI dose-dependently unless hemodynamics are maintained.

CC 1-11 (Pharmacology)
Section cross-reference(s): 9

IT **Imaging**
(**thermog**., of myocardial ischemic area **response** to isoflurane)

IT 26675-46-7, Isoflurane
RL: BIOL (Biological study)
(myocardial ischemic area **response** to, **thermog**. anal. of)

L26 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:100816 HCAPLUS
DOCUMENT NUMBER: 116:100816
TITLE: Use of **infrared thermography** for assessment of stomatal **response** to ozone exposure
AUTHOR(S): Estock, Mark D.; McCool, Patrick M.; Younglove, Ted
CORPORATE SOURCE: Univ. California, Riverside, CA, USA
SOURCE: Proc., Annu. Meet. - Air Waste Manage. Assoc. (1991), 84th(Vol. 15B), Paper 91/142.6, 15 pp.
CODEN: PAMEE5; ISSN: 1052-6102
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The objective of this study was to combine IR thermal imaging data with time series anal. to provide a predictive model of stomatal behavior during pollution exposure of leaves to various ozone concns. There was a strong cross correlation between the filter paper ref. temp. and the leaf temp. The leaves exposed to low ozone did not appear to react to ozone. An increase in ozone fumigation dose resulted in a measurable response. At the highest ozone treatment, the leaves showed initial cooling at the beginning, but then increased in temp. through the end of the observation period.

CC 4-3 (Toxicology)
Section cross-reference(s): 11, 59

ST ozone stomata **IR thermog**

IT **Thermographic** copying
(**IR**, for ozone effect on stomata assessment)

IT Leaf
(stoma, ozone effect on, assessment of, **IR thermog**. for)

IT 10028-15-6, Ozone, biological studies
RL: BIOL (Biological study)
(stomata **response** to, assessment of, **IR thermog**. for)

L26 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:95548 HCAPLUS
DOCUMENT NUMBER: 116:95548
TITLE: Dynamic active microwave thermography applied to hyperthermia monitoring
AUTHOR(S): Martin, J.; Broquetas, A.; Jofre, L.

CORPORATE SOURCE: Dep. Teor. Senyai Commun., ETS Eng. Telecommun., Barcelona, 08080, Spain
SOURCE: J. Photogr. Sci. (1991), 39(4), 146-8
CODEN: JPTSAF; ISSN: 0022-3638
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A numerical simulation is presented of the active tomog. imaging of temp. changes induced in human pelvis and thorax during hyperthermia treatments of cancer. Thermal images allow monitoring and optimization of treatment, increasing its efficacy and avoiding the heating of healthy tissues. The fields scattered by a numerical ref. phantom and the same model locally heated were calcd. at 434 MHz. From this data, differential images were reconstructed with a first order algorithm showing approx. the heated region.

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 8

ST microwave **thermog imaging** hyperthermia cancer treatment; numerical simulation tomog **imaging** hyperthermia treatment

IT **Imaging**
(**thermog.**, of temp. **changes** induced in human pelvis and thorax during hypothermia treatments of cancer)

L26 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1991:196442 HCAPLUS
DOCUMENT NUMBER: 114:196442
TITLE: Rewritable recording medium
INVENTOR(S): Teramura, Kaoru; Kojima, Akio; Yamaguchi, Takeo
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02263686	A2	19901026	JP 1989-84879	19890405
JP 3027584	B2	20000404		

AB In a recording media having a layer mainly contg. F-contg. cryst. polymers that reversibly change their crystallinity by temp. change, the polymers are poly(vinylidene fluoride), copolymers of vinylidene fluoride with trifluoroethylene, that with tetrafluoroethylene, that with hexafluoro propylene, and that with tetrafluoroethylene and hexafluoropropylene. These polymers provide large differences in light transmission in the cryst. state, fast response, and low phase-change temp. These polymers are solvent sol. and easily coatable. Thus, a material with a glass substrate and a 5-.mu.m-thick layer of 53:47 vinylidene fluoride-trifluoroethylene copolymer (m.p. 147.degree.) was made transparent by heating to 160.degree. and rapidly cooled in water to retain its transparency. Reheating to 160.degree. and slow cooling brought about opalescence; these states showed difference in crystallinity .

IC ICM B41M005-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

IT **Imaging**

(**thermog**., materials for, utilizing **change** of light transmission by phase **change** of cryst. fluoropolymers, vinylidene fluoride polymers for)

L26 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:622231 HCAPLUS
DOCUMENT NUMBER: 111:222231
TITLE: Transfer type heat-sensitive receptor materials with a receptor medium made of a vinyl polymer having a nucleic base in its side chains
INVENTOR(S): Enmanji, Kimie; Ando, Torahiko
PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01108093	A2	19890425	JP 1987-267160	19871021

AB In a transfer type heat-sensitive receptor material having a receptor medium adhered on a substrate, with which a thermal transfer recording material having a transfer layer in which a dye is dispersed is heated to transfer the dye onto the medium, the medium is made of a vinyl polymer having a nucleic base or its deriv. in its side chains. The receptor material provides high quality images with good lightfastness and thermal resistance. Thus, methacrylic acid was polymd. in the presence of caffeine and Ce(NO5)4 and the resulting polymer was coated on a paper support to give a receptor paper, while a compn. contg. SOT-Blue 2 (anthraquinone type dye), surfactant, and poly(vinyl alc.) was coated on a PET film to obtain a transfer sheet. A thermal transfer recording set using the paper and sheet gave high quality blue images.
IC ICM B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT **Nucleic acid** bases
RL: USES (Uses)
(vinyl polymer terminated with, in **thermal**-transfer printer receptors, for high quality **images** with light fastness and **thermal** resistance)
IT Printing, nonimpact
(**thermal**-transfer, receptors, contg. nucleic base side chain-contg. vinyl polymers, for high quality **images** with good light fastness and **thermal** resistance)
IT 146-17-8D, Flavin mononucleotide, terminal group, in poly(Me methacrylate) 9003-42-3D, Poly(ethyl methacrylate), adenosine-5'-monophosphate terminal-contg. 9011-14-7D, Poly(methyl methacrylate), nucleic base terminal-contg.
RL: USES (Uses)
(**thermal**-transfer printing receptor contg., for high quality **images** with good light fastness and **thermal** resistance)
IT 58-08-2D, Caffeine, reaction products with poly(Me methacrylate) terminal functionality 61-19-8D, Adenosine-5'-monophosphate, reaction products with poly(Me methacrylate) terminal functionality
RL: USES (Uses)
(**thermal**-transfer printing receptor contg., for high-quality **images** with good lightfastness and **thermal**

resistance)

L26 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:564294 HCAPLUS
DOCUMENT NUMBER: 111:164294
TITLE: Reversible **imaging** method using transparency-**changeable** **thermographic** material
INVENTOR(S): Hotta, Yoshihiko; Kubo, Takashi
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01014078	A2	19890118	JP 1987-171628	19870708

AB In the title thermog. material comprising mainly a transparent binder resin, a low-mol.-wt. org. substance, and a substance controlling the crystal growth of the low-mol.-wt. substance, images are formed in the thermog. material by heating at one temp. and erased by heating at another temp.
IC ICM B41M005-18
ICS B41M005-18
CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST transparency reversible **thermog** copying material; projection slide reversible **thermog imaging**
IT **Thermographic** copying
(transparency-reversible, materials for, contg. transparency-**changeable** org. substances)
IT 57-11-4, Octadecanoic acid, uses and miscellaneous 84-74-2 103-23-1 105-99-7 112-72-1, Myristyl alcohol 112-85-6, Docosanoic acid 126-73-8, Phosphoric acid tributyl ester, uses and miscellaneous 661-19-8, Docosanol 2778-96-3, Stearyl stearate 14117-96-5 22413-03-2 31566-31-1, Glycerol monostearate 42233-07-8 54392-26-6, Sorbitan monoisostearate 103018-67-3D, Maleic anhydride, polymers with olefin acid
RL: USES (Uses)
(reversible **thermog**. material contg., for transparency-reversible **imaging**, for projection slides)
IT 9003-22-9, Vinyl acetate-vinyl chloride copolymer
RL: USES (Uses)
(transparency reversible **thermog**. **imaging** with **thermog** materials contg.)

L26 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1986:433046 HCAPLUS
DOCUMENT NUMBER: 105:33046
TITLE: Thermal-transfer recording sheets
INVENTOR(S): Yamauchi, Mineo; Akata, Masanori; Kutsukake, Masaki
PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61014992	A2	19860123	JP 1984-136968	19840702
JP 04072718	B4	19921118		

AB Thermal-transfer recording sheets comprise a thermal-transfer layer on 1 side of a support sheet and a heat-resistant protective layer contg. reaction products of poly(vinyl butyral) and isocyanates and alkali metal salts or alk. earth metal salts of phosphate esters on the other side. The sheets give prints with good gradation, and without stains, sticking, or wrinkles. Thus, BX-1 [poly(vinyl butyral)] 4.5, PhMe 45, MEK 45.5, Gafac RD720 (Na salt of an aliph. phosphate ester) 1.35, Coronate L (75% EtOAc soln. of diisocyanate) 1.8, and NY3 (10% ethylene dichloride-EtOAc soln. of amine catalyst) 0.23 part were mixed to obtain a compn. for the heat-resistant protective layer, which was then coated on 1 side of a 9-.mu. thick PET sheet, dried, and heated to 60.degree. for 48 h to form a film of .apprx.1.8 g/m2. Then, Kayaset Blue 814 (dispersion dye) 4, Denka Butyral 5000 A [poly(vinyl butyral)] 4.3, PhMe 40, MEK 40, and iso-BuOH 10 parts were mixed to obtain a compn., which was coated on the other side of the PET sheet at 1.2 g/m2 (dry) to obtain a heat-sublimation transfer sheet (A). Sep., Vylon 103 (polyester) 8, Elvaloy 741P (ethylene-vinyl acetate copolymer plasticizer) 2, KF-393 (amino-modified silicone oil) 0.125, X-22-343 (epoxy-modified silicone oil) 0.125, PhMe 70, MEK 10, and cyclohexane 20 parts were mixed to obtain a compn. for the image-receiving layer, which was coated on a 150-.mu. thick paper at 4.0 g/m2 (dry) to obtain a receptor sheet (B). A And B were then combined and used in a thermal printer to show good gradation without stains, sticking, or wrinkles.

IC ICM B41M005-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Siloxanes and Silicones, uses and miscellaneous
RL: USES (Uses)
(amino, **thermal**-transfer recording **receptor** sheets contg., for use with donor sheets with heat-resistant protective layer for improved **image** gradation)

IT Vinyl acetal polymers
RL: USES (Uses)
(butyrals, reaction products with isocyanates and phosphate ester metal salts, **thermal**-transfer recording sheets with protective layers contg., for improved **image** gradation)

IT Recording materials
(**thermal**-transfer, with heat-resistant protective layers for **images** with good gradation)

IT 39278-79-0D, reaction **products** with phosphate ester sodium salts and poly(vinyl butyral) 58206-22-7D, reaction **products** with diisocyanates and poly(vinyl butyrals)
RL: USES (Uses)
(**thermal**-transfer recording materials with **heat** -resistant protective layer contg., for improved **image** gradation)

IT 55599-26-3
RL: USES (Uses)
(**thermal**-transfer recording materials with heat-resistant protective layer in recording layer contg., for improved **image** gradation)

IT 102962-35-6
RL: USES (Uses)
(**thermal**-transfer recording materials with heat-resistant

protective layers contg., for improved **image** gradation)
IT 25038-59-9, uses and miscellaneous 97708-39-9
RL: USES (Uses)
(**thermal**-transfer recording **receptor** sheets contg., for use with donor sheets with heat-resistant protective layer for improved **image** gradation)

L26 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1985:526873 HCAPLUS
DOCUMENT NUMBER: 103:126873
TITLE: Shock effects on hydrous minerals and implications for carbonaceous meteorites
AUTHOR(S): Lange, Manfred A.; Lambert, Philippe; Ahrens, Thomas J.
CORPORATE SOURCE: Div. Geol. Planet. Sci., California Inst. Technol., Pasadena, CA, 91125, USA
SOURCE: Geochim. Cosmochim. Acta (1985), 49(8), 1715-26
CODEN: GCACAK; ISSN: 0016-7037
DOCUMENT TYPE: Journal
LANGUAGE: English
AB IR absorption spectra, thermogravimetric analyses, and optical and SEM are reported of shock-recovered antigorite [61076-98-0] at pressures of 25 to 59 GPa. The IR spectra show systematic changes in absorption peaks related to structural and mol. surface absorbed water. H2O absorption peaks increase at the expense of OH peaks with increasing shock pressure. Changes in Si-O bond vibrational modes, with increasing shock pressure, parallel those seen for other non-hydrous minerals. Thermogravimetric analyses of shock-recovered samples det. the amt. of shock-induced water loss. For samples shocked in vented assemblies, the data define a relation between shock-induced water loss vs. shock pressure. Results for samples shocked in sealed assemblies demonstrate a dependence of water loss on shock pressure and target confinement. For the vented assembly samples, a linear relation between shock pressure and both the length of dehydration interval and the effective activation energy for releasing post-shock structural water in antigorite is found. Optical and SEM of shocked antigorite reveal a no. of textures thought to be unique to shock loading of volatile-bearing minerals. Gas bubbles, which probably are the result of shock-released H2O appear to be injected into zones of partial melting. This process may produce the vesicular dark veins which are distributed throughout heavily shocked samples. The present observations suggest several criteria which may constrain possible shock histories of the hydrous matrix phases of carbonaceous chondrites. A model is proposed for explaining hydrous alteration processes occurring on carbonaceous chondrite parent bodies in the course of their accretion. Shock loading of hydrous minerals would release and redistribute free water in the regoliths of carbonaceous chondrite parent bodies giving rise to the obsd. hydrous alterations.
CC 53-9 (Mineralogical and Geological Chemistry)
IT 61076-98-0
RL: OCCU (Occurrence)
(shock pressure-induced water loss from, **IR** spectral and microtextural and **thermogravimetry changes** in relation to)

L26 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1981:452649 HCAPLUS
DOCUMENT NUMBER: 95:52649
TITLE: **Thermographic imaging** sheet
INVENTOR(S): Franer, Victor Ralley
PATENT ASSIGNEE(S): Minnesota Mining and Mfg. Co., USA

SOURCE: Brit. UK Pat. Appl., 8 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2044473	A	19801015	GB 1979-10236	19790323

AB Materials for the prepn. of colored projection slides from graphic originals comprise a dry, peel-apart, IR-transparent imaging sheet with a dye-receptive backing coated on 1 surface with a uniform nontacky layer contg. vaporizable dye dispersed in a film-forming binder. Thus, a binder contg. crepe rubber 6.72, polyterpene tackifier 0.74, antioxidant 0.22, mineral oil plasticizer 0.34, heptane 90.72, and EtOH 1.56 parts and a conc. contg. binder 32.67, dye 8.67, ground glass filler 4.33, and heptane 54.33 parts were mixed with solvent to give a dye source material contg. dye conc. 43.76, binder 24.35, lanolin 0.77, and heptane 28.12 parts. The material was coated onto a 0.012-cm-thick transparent polyester film, covered with 5.9-8.07 g/m2 dye-receptive material contg. vinyl resin 12.0, Ni oleate 1.0, BuOH 2.3, and THF 84.7 parts, to give dry coating wt. 6.99 g/m2, and a protective nontacky layer contg. butene-ethylene-styrene block copolymer 14.38, ground glass 4.16, and heptane 81.46 parts was overcoated to dry wt. 5-10.8 g/m2. The sheet was contacted with an original, passed through a copier at 1.2 in./s and 235.degree.F, and the backing was peeled off to give a pos. colored image on a transparent background.
IC B41M005-26
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)
Section cross-reference(s): 37, 38
ST projection slide thermog sheet; rubber binder thermog sheet; polyterpene tackifier thermog sheet; vinyl polymer dye **receptor** thermog
IT Thermography
(color-forming **heat**-sensitive materials for, contg. peelable dye-receptive backing, for projection slide **prodn**.)
IT 9003-22-9
RL: USES (Uses)
(dye **receptor**, thermog. sheets with layers contg., for projection slide prodn.)

L26 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1980:540892 HCAPLUS
DOCUMENT NUMBER: 93:140892
TITLE: Formation and properties of nuclei as applied to the photographic process. An electrochemical model
AUTHOR(S): Hoffman, Arnold
CORPORATE SOURCE: Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Stud. Surf. Sci. Catal. (1980), 4(Growth Prop. Met. Clusters: Appl. Catal. Photogr. Process), 365-70
CODEN: SSCTDM
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An alternative hypothesis concerning the nature of the latent image/development process, based on the premise that the latent image is a thermodn. change in the Ag halide crystal, is presented.
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)
ST latent **image** development **thermodn** model; nuclei property photog process theory
IT Photography
(latent **image** formation in, **thermodn**.

change in silver halide crystal in)
IT **Thermodynamics**
(of photog. latent **image** formation and development)
IT Photographic development
(**thermodn. change** in silver halide crystals in)

L26 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1975:478024 HCAPLUS
DOCUMENT NUMBER: 83:78024
TITLE: Thermal studies (DTA and **thermogravimetric** analysis) and spectroscopic studies (x-ray and **ir**) of the dehydration of benzene-1,2,3-tricarboxylic acid dihydrate
AUTHOR(S): Fornies-Marquina, J. M.; Melendez, F.; Chanh, N. B.
CORPORATE SOURCE: Lab. Cristallogr. Phys. Crist., Univ. Bordeaux, Talence, Fr.
SOURCE: J. Therm. Anal. (1975), 7(2), 263-72
CODEN: JTHEA9
DOCUMENT TYPE: Journal
LANGUAGE: French
AB The solid-state dehydration of benzene-1,2,3-tricarboxylic acid and dihydrate is examd. by differential thermal and thermogravimetric anal. and spectroscopic methods (x-ray diffraction and infrared spectroscopy). The 1st step of dehydration (at 70.degree.) involves the loss of the H2O mols. of crystn. and the rearrangement of the acid moles. The 2nd step of dehydration (at 199.degree.) preceeding the fusion of the product corresponds to the elimination of one H2O mol. from the two CO2H groups. The dehydration enthalpy of the loss of H2O of crystn. correspond to the breaking energy of four H bonds. The enthalpies of the other steps are also discussed.
CC 22-3 (Physical Organic Chemistry)
IT Computer program
(for temp. **change** in **thermogravimetry**, PRT-SETARAM)

L26 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1974:427251 HCAPLUS
DOCUMENT NUMBER: 81:27251
TITLE: Luminescent pigments, inorganic
AUTHOR(S): Byler, William H.
CORPORATE SOURCE: U.S. Rad. Corp., Morristown, N. J., USA
SOURCE: Pigment Handb. (1973), Volume 1, 905-23. Editor(s): Patton, Temple C. Wiley: New York, N. Y.
CODEN: 28GOAO
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review of inorganic fluorescent, phosphorescent, heat-sensitive, ir-quenching type and uv-responsive type pigments.
CC 42-0 (Coatings, Inks, and Related Products)
ST review luminescent inorg pigment; fluorescent pigment review; phosphorescent pigment review; **thermographic** pigment review; **IR** quenching pigment review; UV **responsive** pigment review

L26 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1969:455180 HCAPLUS
DOCUMENT NUMBER: 71:55180
TITLE: **Thermography** by **infrared** detector. Tellurium-mercury-cadmium alloys
AUTHOR(S): Verie, Christian
CORPORATE SOURCE: Lab. Magn. Phys. Solide, Meudon-Bellevue, Fr.

SOURCE: Sciences (Paris) (1968), No. 57, 49-51
CODEN: SCITB6
DOCUMENT TYPE: Journal
LANGUAGE: French

AB Photovoltaic response in the ir region (0-14 .mu.) was studied as a function of x in single-crystal CdxHg1-xTe at 77.degree.K. Max. spectral response shifted with x from .apprx.5.5 .mu. to 10.6 .mu. (x = 0.19) at 77.degree.K. The latter is located in a region transparent to the atm. and makes possible the use of these alloys as detectors in earth-space telecommunications, aerial reconnaissance, and in detection of clear atm. turbulence. Moreover, p-n junctions (prepd. by diffusion of Hg into the alloy single crystals) at 20.degree.K. gave max. photovoltaic responses at wavelengths .ltoreq.35 .mu., and make possible the application of these detectors to thermographic studies of black bodies at temps. near 80.degree.K.

CC 73 (Spectra and Other Optical Properties)
ST photovoltaic **response** Cd Te Hg; cadmium Te Hg photovoltaic **response**; tellurium Cd Hg photovoltaic **response**; mercury Cd Te photovoltaic **response**; **thermography IR** detector; **IR** detector **thermography**; detector **IR thermography**; semiconductors photovoltaic **response**
IT Light, **infrared**
(detectors, **thermography** of cadmium telluride-mercury telluride solid solns.)
IT Blackbody
(**thermography** of, photovoltaic **response** of cadmium telluride-mercury telluride solid solns. as detector for)

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                DEL HIS
L1         5873 S (THERMAL OR THERMOG? OR THERMOD?) (3A) IMAG?
L2          572 S (IR OR INFRARED OR INFRA RED) (3A) (THERMOG? OR THERMOMET?)
L3         6406 S L1 OR L2
L4           79 S THERMOGENESIS
L5            2 S L3 AND L4
L6           80 S (THERMOD? OR THERMOG? ) (3A) (CHANG? OR RESPONS?)
L7        51509 S (HEAT (3A) (PROD? OR CHANG?))
L8            7 S L3 AND L6
L9           22 S L3 AND (B04 OR D16)/DC
L10         377 S TEST AGENT#
L11           2 S L3 AND L10
L12         106 S L7 AND L3
L13           1 S L12 AND L9
L14      372090 S S03/DC
L15           8 S L12 AND L14
L16           1 S L15 AND B/DC
L17          27 S L3 AND B/DC
L18          24 S L3 AND D/DC
L19           2 S L3 AND C/DC
L20          43 S L17 OR L18 OR L19
L21      465830 S CELL# OR PROTEIN# OR CARBOHYDR? OR ENZYME# OR LIPID# OR NUCLE
L22          10 S L20 AND L21
L23          15 S L5 OR L8 OR L11 OR L13 OR L16 OR L22
L24       30317 S (TEMP## OR TEMPERATUR? ) (3A) (CHANG? )
L25         151 S L3 AND L24
L26           3 S L25 AND (B OR D OR C)/DC
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L27 16 S L23 OR L26

FILE 'WPIDS' ENTERED AT 12:01:56 ON 10 JUN 2002

=> d .wp 1-16

L27 ANSWER 1 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2002-188131 [24] WPIDS
DNN N2002-142685 DNC C2002-057991
TI **Infrared thermography** method for measuring vasodilation or altered blood flow in a given area in a patient.
DC A96 **B05 B07 D16 D22** P31
IN MAREK, P A; TROCHA, A M
PA (NITR-N) NITROMED INC; (MARE-I) MAREK P A; (TROC-I) TROCHA A M
CYC 95
PI WO 2001085013 A2 20011115 (200224)* EN 68p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001061244 A 20011120 (200224)
US 2001046471 A1 20011129 (200224)
ADT WO 2001085013 A2 WO 2001-US14699 20010508; AU 2001061244 A AU 2001-61244 20010508; US 2001046471 A1 Provisional US 2000-202935P 20000509, US 2001-850081 20010508
FDT AU 2001061244 A Based on WO 200185013
PRAI US 2000-202935P 20000509; US 2001-850081 20010508
AB WO 200185013 A UPAB: 20020416
NOVELTY - A method of measuring a **thermodynamic change** in an area of interest in a patient comprises: (a) measuring the baseline temperature in the area using **infrared thermography**; (b) administering to the patient a composition; (c) measuring the **temperature change** in the area using **infrared thermography**; and (d) comparing the temperature obtained with the baseline temperature.

DETAILED DESCRIPTION - A method of measuring a **thermodynamic change** in an area of interest in a patient comprises:

(a) measuring the baseline temperature in the area using **infrared thermography**;

(b) administering to the patient a composition comprising at least one compound that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase or a salt thereof and/or at least one vasoactive agent or a salt;

(c) measuring the **temperature change** in the area using **infrared thermography**; and

(d) comparing the temperature obtained with the baseline temperature where a difference in the two temperatures indicates that the compound causes a **thermodynamic change**.

INDEPENDENT CLAIMS are also included for:

(1) a method (2) for identifying a compound that produces vasodilation or changes in blood flow; and

(2) composition comprising at least one S-nitrosothiol compound or its salt and at least one penetration enhancer.

ACTIVITY - Vasotropic; antiinflammatory; hypotensive; tranquilizer; antiulcer.

No specific biological data given.

MECHANISM OF ACTION - None given.

USE - The method is used for measuring vasodilation or changes in blood flow in a patient and can be used for diagnosing diseases or disorders related to vasodilation and changes in blood flow e.g. Raynaud's syndrome, inflammation, hypertension, gastrointestinal disorders (all claimed) e.g. inflammatory bowel disease, peptic ulcers, gastric hyperacidity, dyspepsia, gastroparesis, Zollinger-Ellison syndrome, gastoesophageal reflux disease, short-bowel (anastomosis)syndrome, hypersecretory states associated with systemic mastocytosis or basophilic leukemia and hyperhistaminemia and bleeding peptic ulcers, sexual dysfunction especially female sexual arousal or central nervous system disorders. The method can also be used for screening and identifying drug candidates for treating such disorders.
Dwg.1/6

L27 ANSWER 2 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-579253 [65] WPIDS
DNN N2001-431111 DNC C2001-171955
TI Nanotube physical property modification method in microelectronic device application, comprises disturbing hexagonal core lattice structure by applying stress conditions to nanotube.
DC **B04** J04 L03 S03 W04
IN YAKOBSON, B I
PA (UYNC-N) UNIV NORTH CAROLINA STATE
CYC 1
PI US 6280677 B1 20010828 (200165)* 8p
ADT US 6280677 B1 Provisional US 1997-64539P 19971105, US 1998-186396 19981104
PRAI US 1997-64539P 19971105; US 1998-186396 19981104
AB US 6280677 B UPAB: 20011108
NOVELTY - A method of modifying physical properties of a nanotube comprises subjecting a nanotube having hexagonal core lattice structure subjected to stress conditions, so as to disturb the lattice structure and form pentagon-heptagon and heptagon-pentagon dipoles (30a,30b) of dislocation cores.

DETAILED DESCRIPTION - A method of modifying physical properties of a nanotube comprises subjecting a nanotube having hexagonal core lattice structure subjected to stress conditions, so as to disturb the lattice structure and form pentagon-heptagon and heptagon-pentagon dipoles (30a,30b) of dislocation cores. The dipole of dislocation cores splits and propagates in the nanotube are such that the cores are separated by a domain of modified lattice structure so as to alter its electrical property.

USE - For changing electrical, chemical and mechanical properties of nanotubes used in infrared sensors for **thermal imaging** and nanoscale diodes, photoelectric **cells**, nanoscale transistors. Also for chemical sensors used in environment characterization and intracellular nanoprobes used in biological and medical studies.

ADVANTAGE - Since by applying stress conditions, the chemical functionality of nanotube is changed, the nanotubes are allowed to be useful in a variety of end use applications requiring modified structure.

DESCRIPTION OF DRAWING(S) - The figure shows a nanotube having altered lattice structure.
Dipoles 30a,30b
Dwg.1/5

L27 ANSWER 3 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-367516 [38] WPIDS
DNN N2001-268164 DNC C2001-112699
TI Non-invasive, rapid diagnostic and drug screening methods, e.g. for diagnosis of lipodystrophy, involving measurement of temperature

differences using **infrared thermography**.

DC **B04** P31

IN LENHARD, J M; PAULIK, M A

PA (GLAX) GLAXO GROUP LTD

CYC 94

PI WO 2001035819 A1 20010525 (200138)* EN 106p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001016229 A 20010530 (200152)

ADT WO 2001035819 A1 WO 2000-US31755 20001117; AU 2001016229 A AU 2001-16229 20001117

FDT AU 2001016229 A Based on WO 200135819

PRAI US 1999-441493 19991117

AB WO 200135819 A UPAB: 20010711
NOVELTY - Methods for diagnosing lipodystrophy in a body region in vivo, by: measuring the temperature of the region using **infrared thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG; and determining the temperature of internal tissues or organs.

DETAILED DESCRIPTION - Methods are claimed for: (a) diagnosing lipodystrophy in a body region in vivo, by measuring the temperature of the region (specifically the face or the back of the neck) using **infrared thermography** (ITG), a raise in temperature relative to that in a normal subject indicating lipodystrophy; (b) monitoring the dyslipidemic effect of drug therapy, by monitoring the patient's body temperature using ITG, a raise in temperature relative to an earlier value indicating a dyslipidemic effect; and (c) determining the temperature of internal tissues or organs, by replacing a portion of the skin near the tissue or organ with an infrared-invisible polymer and measuring the temperature by ITG.

USE - Method (b) is specifically used (claimed) for measuring the temperature of an animal before and after administration of a **test agent**, a **change** in **temperature** indicating that the agent had a thermodynamic effect on the tissue or organ. More generally ITG methods are useful for monitoring physiological and molecular events eliciting a thermogenic effect in animals (including humans), plants, tissues, **cells** and **cell**-free systems, e.g. in screening, identifying and ranking drug candidates for multiple diseases, disorders and conditions. Methods (a) and (b) are especially used (claimed) for diagnosing lipodystrophy in HIV-positive patients and/or for monitoring the dyslipidemic effect of therapy with a protease inhibitor.

ADVANTAGE - A rapid, non-invasive method for measuring real-time **thermogenesis** is provided. In particular a rapid, early method is provided for diagnosis of lipodystrophy syndrome in HIV/AIDS patients receiving protease inhibitor therapy.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic of an **infrared thermography** device suitable for use in **imaging thermogenesis** in a living animal.

Infrared camera 1
Isothermal chamber 2
Heating pad (37 deg. C) 3
Computer interface 4
Interscapular brown tissue 5

Dwg.2/46

L27 ANSWER 4 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-111660 [12] WPIDS
DNN N2001-081996 DNC C2001-033037
TI Hybridized biological microbolometer, useful for thermal infrared detection, comprises a heat sensitive **protein** layer with electrical contacts on a silicon dioxide substrate insulator.
DC **D16** L03 U12
IN DEB, K
PA (USSA) US SEC OF ARMY
CYC 1
PI US 6160257 A 20001212 (200112)* 5p
ADT US 6160257 A US 1998-114249 19980706
PRAI US 1998-114249 19980706
AB US 6160257 A UPAB: 20010302
NOVELTY - A hybridized biological microbolometer (10) comprising a heat sensitive **protein** layer with electrical contacts, on a silicon dioxide substrate insulator, is new.
USE - For thermal infrared detection.
ADVANTAGE - The microbolometer has increased sensitivity, provides higher imaging sensitivity, and reduces 1/f and Johnson noise therefore giving higher resolution in **thermal imagers**.
DESCRIPTION OF DRAWING(S) - The figure shows a representation of a single detector element.
Hybridized biological microbolometer 10
Dwg.1/3

L27 ANSWER 5 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-033661 [05] WPIDS
DNN N2001-026358 DNC C2001-010355
TI Recording materials useful in direct **thermal imaging** apparatus comprise time-temperature indicator compound convertible from inactive to active state by application of heat.
DC A97 **B07** E19 G05 P75 T04
IN ROTH, J D
PA (NATC) NCR INT INC
CYC 25
PI EP 1048477 A1 20001102 (200105)* EN 10p
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT EP 1048477 A1 EP 2000-303457 20000425
PRAI US 1999-302482 19990430
AB EP 1048477 A UPAB: 20010124
NOVELTY - A recording material (20) comprises at least one time-temperature indicator (10) (TTI) compound which is convertible from an inactive to an active state by heating in a direct **thermal imaging** apparatus. The recording material functions as a time **temperature** indicator exhibiting detectable **changes** in response to an exposure element when the indicator compound is active.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method converting the indicator compound from inactive state to active state.
USE - In a direct **thermal imaging** apparatus (claimed). TTIs are used for monitoring time and temperature exposure of perishables in-transit, consumer packages, medical perishables, packaged fresh and frozen foods, diary products, meat, pharmaceutical, photographic film, canned goods, spices, vitamins, seeds, plants, paints, coatings, adhesives, caulks, sterilization indicators and cooking indicators.
ADVANTAGE - TTI labels can be activated at the site of the application and remove need for protection of the labels prior to use. TTI gradually changes with time typically faster at elevated temperatures and

slower at low temperatures. The recording material can be manufactured, stored and shipped under normal conditions without resort to refrigerated and light-protected environments.

DESCRIPTION OF DRAWING(S) - The figure shows the aging sequence of a time-temperature indicator.

Central portion 1

Outer ring 2

Time-temperature indicator 10

Recording material. 20

Dwg.1A/1

L27 ANSWER 6 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-452070 [39] WPIDS
DNN N2000-336598 DNC C2000-137722
TI Infrared optical element used in a sensor for analyzing fluids, especially biological fluids, or body tissue in diagnostics, or cosmetic skin analysis, comprises a Knoop hardness of up to 20.
DC **B04** E32 J04 L03 P81 S03 V07
IN KATZIR, A
PA (KATZ-I) KATZIR A
CYC 90
PI WO 2000036458 A1 20000622 (200039)* EN 59p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000015833 A 20000703 (200046)
ADT WO 2000036458 A1 WO 1999-IL672 19991209; AU 2000015833 A AU 2000-15833 19991209
FDT AU 2000015833 A Based on WO 200036458
PRAI US 1998-111929P 19981211
AB WO 200036458 A UPAB: 20001006

NOVELTY - The infrared (IR) optical element has a Knoop hardness of up to 20 and includes up to 10 parts per million (ppm) of impurities, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) forming the novel optical element, comprising cold working an ingot of an ionic crystalline material having a Knoop hardness of up to 20 and including up to 10 ppm impurities;

(2) a sensor for attenuated total reflection spectroscopy, comprising a flat portion up to 1 mm thick of the ionic crystalline material, having a Knoop hardness of up to 20 and including up to 10 ppm impurities, or having an elongation ratio of at least 10 % at a temperature below 200 deg. C;

(3) a **cell**, for attenuated total reflection spectroscopy, comprising the sensor of (2);

(4) a spectrometer, for attenuated total reflection spectroscopy, comprising the sensor of (2), or the **cell** of (3);

(5) making a sensor for total reflection spectroscopy, comprising forming, on a surface of a substrate having an index of refraction, a layer, including only an ionic crystalline material having a Knoop hardness of up to 20, or an elongation ratio of at least 10 % at a temperature below 200 deg. C, and having an index of refraction lower than that of the substrate;

(6) an optical element, comprising an ionic crystalline material having an elongation ratio of at least 10 % at a temperature below 200 deg. C, and including up to 10 ppm impurities; and

(7) forming an optical element, comprising cold working an ingot of

an ionic crystalline material having an elongation ratio of at least 10 % at a temperature below 200 deg. C, and including up to 10 ppm impurities.

USE - The infrared optical element is used in a sensor, for analyzing a fluid by contacting the sensor with the fluid and measuring its IR spectrum, and for analyzing a body tissue by contacting the sensor with the tissue, preferably subcutaneously using a hypodermic needle, catheter or endoscope, and measuring its IR spectrum (claimed). The sensor is useful in the diagnosis of tissues and biological fluids, in medicine, in cosmetics for skin analysis, or for measuring the diffusion of cosmetics into the skin. They can also be used in **thermal imaging** devices, IR lasers, and IR spectroscopy in industry, science, medicine clinical chemistry and pathology.

ADVANTAGE - The optical elements can be manufactured in less time, at lower cost, and with easier handling suitable for mass production. As lower temperatures are used for the cold working, more accurate dimensions can be achieved and surface finish is better, compared to more conventional materials such as other inorganic crystals and polymers. The low impurity content prevents darkening of the material.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic illustration of two cold working methods of forming an infrared optical element.

Monocrystalline ingot 64
Dies 66
Piston 68
Lower die 72
Punch 74
Piston 76
Base 78.
Dwg.5/20

L27 ANSWER 7 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-430907 [37] WPIDS
DNC C2000-130844
TI New aliphatic copolymers and polyester resins and compositions with regulated thermal, hydrolytic and biological degradability for use e.g. as coating for agricultural compositions and base film for marking films.
DC A18 A23 A82 A97 **C04** G02 G05
IN ITO, M; KAJIKAWA, Y; SAKANE, M; SHIMIZU, K; TANIGAWA, M
PA (DAIL) DAICEL CHEM IND LTD
CYC 21
PI WO 2000029460 A1 20000525 (200037)* JA 145p
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: US
JP 2000143781 A 20000526 (200037) 8p
EP 1048683 A1 20001102 (200056) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 2000327798 A 20001128 (200065) 6p
JP 2000351686 A 20001219 (200104) 7p
JP 2000351687 A 20001219 (200104) 10p
JP 2001002763 A 20010109 (200107) 10p
JP 2001064333 A 20010313 (200118) 11p
JP 2001064565 A 20010313 (200118) 10p
JP 2001105745 A 20010417 (200128) 5p
JP 2001105750 A 20010417 (200128) 7p
ADT WO 2000029460 A1 WO 1999-JP6367 19991115; JP 2000143781 A JP 1998-323159 19981113; EP 1048683 A1 EP 1999-972231 19991115, WO 1999-JP6367 19991115; JP 2000327798 A JP 1999-140708 19990520; JP 2000351686 A JP 1999-161729 19990608; JP 2000351687 A JP 1999-162951 19990609; JP 2001002763 A JP 1999-173317 19990618; JP 2001064333 A JP 1999-238490 19990825; JP 2001064565 A JP 1999-238439 19990825; JP 2001105745 A JP 1999-286716

19991007; JP 2001105750 A JP 1999-286766 19991007
FDT EP 1048683 A1 Based on WO 200029460
PRAI JP 1999-286766 19991007; JP 1998-323159 19981113; JP 1999-140708 19990520; JP 1999-161729 19990608; JP 1999-162951 19990609; JP 1999-173317 19990618; JP 1999-238439 19990825; JP 1999-238490 19990825; JP 1999-286716 19991007
AB WO 200029460 A UPAB: 20000807
NOVELTY - Aliphatic polyester is claimed containing lactide and/or lactone monomers and with the terminal alcohol groups reduced to 50% or less and the terminal carboxy groups reduced to 30 or less.

DETAILED DESCRIPTION - DETAILED DESCRIPTION - The following are claimed (A) an aliphatic polyester containing lactide and/or lactone monomers and with the terminal alcohol groups reduced to 50% or less and the terminal carboxy groups reduced to 30 or less; (B) an agricultural or horticultural particulate composition comprising (i) a coating film comprising (a) the above polyester or (b) a cyclic cellulose ester and optionally an olefin, olefin copolymer, vinylidene chloride, vinylidene chloride copolymer, diene, wax, petroleum resin, natural resin, cellulose acetate resin, polycarbonate, and/or fat; and (ii) an active agent; (C) a base film for marking films comprising a grafted, ring opened hydroxy containing fatty acid cellulose ester resin; (D) a **thermal** transfer **image receptor** comprising hydroxy containing ring opened cyclic cellulose ester compound as dye; (E) a conductive coating comprising (i) (a) 2-20 wt% grafted, ring opened hydroxy containing ester compound and (b) 98-80 wt% resin coating; and (ii) (a) 40-60 wt% conductive carbon black and (b) 60-40 wt% scale form- graphite provided that (a) + (b) in (i) and (a) +(b) in (ii) = 100%; (F) graft copolymer comprising hydroxy containing ring opened cyclic cellulose ester compound containing 1-30 wt% cellulose ester; and 70-99 wt% unsaturated monomer with further conditions listed in the claims; (G) a coating composition containing the graft copolymer in (F); and (H) a lactide/lactone copolymer having a ratio of lactidenate of 3 or more and a ratio of lactonenate of 1-10 with further conditions listed in the claims.

USE - As aliphatic copolymers and polyester resins and compositions with regulated thermal, hydrolytic and biological degradability for use e.g. as biodegradable coatings for agricultural and horticultural particulate compositions containing e.g. fertilizers, as a base film for marking films, as **thermal** transfer **image receptors** for forming recorded images, as a conductive coating, as a coating for e.g. mending, finishing or protecting industrial machines, building and construction materials, furniture and cars and as a heat resistant copolymer for use in e.g. compost bins, hot melt glues and fishing lines.

ADVANTAGE - Polyester has regulatable thermal, hydrolytic and biodegradable properties. Fertilizers have controlled release and leave no decomposition products in the soil. Marking films are free from problems such as volatilization or migration of plasticizers. **Thermal** transfer **image receptor** has good releasability, developed color intensity and brightness. Conductive coating has good storage stability, adhesion and conductivity. Coating composition is not toxic, is not an irritant and has good dryability. Copolymer has good heat and impact resistance.

Dwg.0/9

L27 ANSWER 8 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-086621 [07] WPIDS
DNN N2000-067995 DNC C2000-024095
TI Screening of **test agent** such as drugs for its ability to produce **thermodynamic change** in **cell**-free sample using **infrared thermography**.

DC **B04 C07 D16 S03** U12
IN LENHARD, J M; PAULIK, M A
PA (GLAX) GLAXO GROUP LTD
CYC 87
PI WO 9960630 A1 19991125 (200007)* EN 92p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
AU 9940774 A 19991206 (200019)
EP 1086494 A1 20010328 (200118) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 9960630 A1 WO 1999-US10579 19990514; AU 9940774 A AU 1999-40774 19990514; EP 1086494 A1 EP 1999-924222 19990514, WO 1999-US10579 19990514
FDT AU 9940774 A Based on WO 9960630; EP 1086494 A1 Based on WO 9960630
PRAI US 1998-85736P 19980515
AB WO 9960630 A UPAB: 20000209
NOVELTY - Screening a **test agent** for its ability to produce **thermodynamic change** in a **cell**-free sample comprising measuring the temperature of the sample before and after contact with the **test agent** using **infrared thermography**, is new.

DETAILED DESCRIPTION - Screening (I) a **test agent** for its ability to produce **thermodynamic change** in a **cell**-free sample comprising measuring the temperature of the sample using **infrared** (**IR**) **thermography** before and after contact with the **test agent** using **infrared thermography**, is new. The difference in sample temperature before and after contact with the agent is indicative of induced **thermodynamic change**.

INDEPENDENT CLAIMS are also included for the following:

(i) screening a **test agent** (e.g. a drug) for its ability to produce **thermodynamic change** in an in-vitro **cell** sample by the method of (I);

(ii) monitoring the physical state of a compound or composition comprising measuring the temperature of the compound or composition using **IR thermography**, over time;

(iii) determining amount of a compound or composition in a container comprising measuring temperature of the compound or composition;

(iv) determining the thermogenic effect of a **test agent** on a sample comprising contacting a sample with different amounts agent or with the same amount of agent at different points in time, and measuring the difference in temperature;

(v) screening animals for their ability to respond thermogenically to a **test agent** comprising measuring the **thermogenic response** of animals to **test agents**, using **IR thermography**.

USE - The tests are useful for screening, identifying, characterizing, ranking and selecting **test agents** such as drugs (catabolic or anabolic agents) for use in treating various diseases, disorders or conditions associated with changes in metabolism, toxicity, cellular growth, organ development and/or differentiation based on potency, selectivity, efficacy, pharmacokinetics and pharmacodynamics of the agent in various **cell**-free, **cell**, tissue, plant, animal and human-based **thermogenesis** assays using **IR thermography**. The **IR thermography** is further used for analyzing the effect of **test agents** on **heat production** in **cell**, tissue, plant

and animal types during **enzyme** catalysis and **ligand** interaction with a binding partner. The **IR thermography** is also used for evaluating the physical state and/or amount of a compound (claimed), monitoring the effect of environmental changes and/or genotypes on **thermogenesis** in various **organisms**, drug-drug interactions in various **organisms**, evaluating the safety profile of pharmacological agents and monitoring the safety, potency, efficacy of various treatments on hair loss and growth.

ADVANTAGE - The tests provide a non-invasive method of analyzing the effects of agents on **heat production** in animals, plants, **cells** and chemical reactions in **cell**-free systems by **IR thermography**. The screening, identification and ranking of drug compounds for their ability to alter heat dissipation and application in treating various diseases, disorder and conditions is carried out effectively.

Dwg.0/25

L27 ANSWER 9 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1998-499085 [43] WPIDS
DNN N1998-389905 DNC C1998-150466
TI **Nucleic acid** sequence detection method using scanning probe microscope - involves performing imaging of sample which is thermal denatured by lowering temperature.
DC **B04 D16** J04 S02 S03
IN HORI, K; OKADA, T; TAKAHASHI, T
PA (OLYU) OLYMPUS OPTICAL CO LTD
CYC 2
PI JP 10215899 A 19980818 (199843)* 13p
US 6194148 B1 20010227 (200114)
ADT JP 10215899 A JP 1997-25219 19970207; US 6194148 B1 US 1998-19931 19980206
PRAI JP 1997-25219 19970207
AB JP 10215899 A UPAB: 19981028
A **nucleic acid** detection method involves performing thermal denaturation of a mixed sample that contains **nucleic acid** of a complementary sequence and **nucleic acid** probe. The higher order structure of the acid present in the sample is then eliminated. The sample is again denatured by lowering the temperature and is then kept in a board of a scanning probe microscope. Finally, imaging of the sample is performed.

USE - The method is used for the detection of specific **nucleic acid** sequences.

ADVANTAGE - The method allows reduction of noise at time of detection. It also detects reliably, even when sample has very small amount.

Dwg.0/9

L27 ANSWER 10 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1998-145714 [13] WPIDS
DNN N1998-115243
TI Lamination testing method of coatings on substrates - heating coating by irradiation with light flashes, recording temporal change of temp. distribution by **IR thermography** camera, and displaying distribution in timewise and local resolution for detecting areas with loss of lamination.
DC S02 S03 W06
IN BECKER, E
PA (SIEI) SIEMENS AG
CYC 21
PI WO 9805949 A1 19980212 (199813)* DE 21p
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: JP KR RU US
ADT WO 9805949 A1 WO 1997-DE1615 19970730
PRAI DE 1996-19630988 19960731
AB WO 9805949 A UPAB: 19980330
The method includes the steps of heating the coating area to be examined through irradiating it with light flashes, and recording the temporal change of the temperature distribution on the surface of the coating by means of an **IR thermography** camera (2).

The temperature distribution is displayed in a timewise and local resolution of the surface for detecting areas with increased temperature wrt the surrounding surface area, representing areas with a loss of lamination.

USE - Esp. testing vacuum plasma sprayed coatings on gas turbine blade manufactured through nickel-alloy based casting, e. g of type IN 939, IN 738 LC or PWA 1483 SX.

ADVANTAGE - Provides non-destructive method, which enables reliable detection of disturbances in coating.

Dwg.1/3

L27 ANSWER 11 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1997-311566 [29] WPIDS
DNN N1997-257944 DNC C1997-100425
TI **Thermal imaging** system is triggered by, e.g. heart beat - captures human brain **cell** images at selected moment, quality and information content contained within image is not down-graded by other bodily functions.
DC **B04 D16** P31 S03 S05 W04
IN CABANSKI, W; ERNE, S N; NOTHAFT, P
PA (AEGE) AEG INFRAROT-MODULE GMBH; (ERNE-I) ERNE S N; (TELE) TEMIC TELEFUNKEN MICROELECTRONIC GMBH
CYC 1
PI DE 19544187 A1 19970605 (199729)* 4p
ADT DE 19544187 A1 DE 1995-19544187 19951128
PRAI DE 1995-19544187 19951128
AB DE 19544187 A UPAB: 19970716
Process generates **thermal images** of **cells** within a limited zone (20) on living humans or animal bodies (2). The novelty is that the **thermal imaging** system (1) incorporates:

(a) an infra-red camera (10) which can be triggered when required, and a display unit (11) presenting **thermal images**;

(b) a camera, triggered by signals generated in the body (2), or is synchronised as required;

(c) **thermal images**, processed and displayed showing the change in the **cells** and their activity with time;

(d) an infra-red camera (10), triggered by signals such as the heart beat or breathing;

(e) **cells**, especially brain **cells**, laid bare by surgical intervention, and

(f) a camera, synchronised with the trigger signal to capture images associated with selected patient stimuli.

USE - The system captures images of selected, e.g. tumour **cell** activity at a required moment.

ADVANTAGE - The quality and information content contained within the image is not downgraded by other bodily functions.

Dwg.1/1

L27 ANSWER 12 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1997-296863 [27] WPIDS
DNN N1997-245315 DNC C1997-096246

TI Temperature measurement in biological systems - is based on fluorescence emission from **lipid** vesicle impregnated with fluorescent dye.
DC **B04 D16** E14 E24 J04 S03
IN BERNS, M W; LIU, Y; SONEK, G J; TROMBERG, B J
PA (REGC) UNIV CALIFORNIA
CYC 1
PI US 5631141 A 19970520 (199727)* 11p
ADT US 5631141 A US 1995-435354 19950505
PRAI US 1995-435354 19950505
AB US 5631141 A UPAB: 19970702
High resolution in situ measurement of temperature at a location within an aqueous biological system comprises: (a) selecting a vesicle comprising a phospholipid membrane impregnated with an environmentally sensitive fluorescent dye, the membrane having a transition temperature at which the membrane undergoes a phase transition between gel and liquid crystalline states chosen to be in predetermined relationship to the anticipated temperature range of the system to be measured, the membrane having a known relationship between generalised polarisation and temperature, generalised polarisation being the ratio (IG-IL)/(IG+IL) of the difference to the sums of the intensities measured at the maximum emission wavelengths in the gel (IG) and liquid crystalline (IL) phases; (b) introducing the vesicle into the biological system to be measured; (c) manipulating the vesicle to the location where temperature is to be measured; (d) optically measuring the generalised polarisation of the vesicle, and (e) calculating a value for the temperature of the system from the generalised polarisation measured and the known relationship between temperature and generalised polarisation for the membrane of the vesicle. The method further comprises (f) obtaining a calibration generalised polarisation for the vesicle by measuring the generalised polarisation of the vesicle at a predetermined temperature prior to introduction of the vesicle into the biological system to be measured; where the calibration generalised polarisation is utilised in step (e) by modifying the known relationship between temperature and generalised polarisation for the membrane of the vesicle. The manipulating of the vesicle comprises use of an optical laser trap consisting of a highly focused laser beam that creates optical tweezers. The vesicle is attached to an optical fiber and the step of manipulation of the vesicle comprises manipulation of the optical fiber. The optical fiber is disposed in a catheter.

The environmentally sensitive fluorescent dye comprises 6-dodecanoyl-2-dimethylaminonaphthalene, i.e. Laurdan (TM).

USE/ADVANTAGE - The vesicle serves as a sensor that is ideally adapted for use in situ. The sensor enables the user to accurately perform microthermometry of biological systems. The sensor is made of organic materials similar to those of the biological system's **cell** nuclei and membranes, and is micron-sized. Therefore, it can be embedded within biological systems such as **cells**, or transported within the body, to facilitate noninvasive and non-destructive site-specific microthermometric measurements.The sensor may be transported and manipulated using radiation pressure forces of focused laser beams, or even coupled, as a transducer element, to an optical fiber tip for remote sensing of temperature. Given the high spatial resolution of the sensor, it should also be possible to perform metabolic **imaging** and **thermal** mapping of **cell** and tissue systems at the submicron level. This would assist in assessing, optically and in real time. the effects of exposure to highly focused laser b beams on tissues during diagnostic and therapeutic treatment. Further, such a sensor will allow for study of the effects upon tissues of therapeutic treatment techniques such as the use of lasers, and even of ''optical tweezers'' and other procedures thought to be benign.

Dwg.0/5

L27 ANSWER 13 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1994-346809 [43] WPIDS
DNN N1994-272359 DNC C1994-157713
TI Reversible thermographic recording material giving good image contrast - comprises overcoat layer contg. pearl pigment coated on at least part of thermographic layer.
DC A89 G05 P75
PA (OJIP) OJI PAPER CO
CYC 1
PI JP 06270542 A 19940927 (199443)* 4p
ADT JP 06270542 A JP 1993-66556 19930325
PRAI JP 1993-66556 19930325
AB JP 06270542 A UPAB: 19941216
Recording material comprises the **thermographic** layer, **changing** reversibly the transparency of the material depending on the temperature change. Overcoat layer contg. the pearl pigment is coated on at least one part of the thermographic layer.
USE/ADVANTAGE - Reversible **thermographic** recording material gives **image** of good contrast.
Dwg.0/0

L27 ANSWER 14 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1993-282704 [36] WPIDS
DNN N1993-217242
TI **Thermographic image** characteristic **change** sensing appts. eg for PCB monitoring - determining deviation in coordinates of reference points and correcting positions of successive images so that monitored point is always in same position.
DC S02 S03 T01 V04
IN SALISBURY, R
PA (THER-N) THERMOTEKNIX SYSTEMS LTD
CYC 2
PI GB 2264779 A 19930908 (199336)* 22p
US 5483604 A 19960109 (199608) 6p
GB 2264779 B 19960501 (199621) 1p
ADT GB 2264779 A GB 1992-3583 19920220; US 5483604 A Cont of US 1993-19703 19930219, US 1994-317842 19941004; GB 2264779 B GB 1992-3583 19920220
PRAI GB 1992-3583 19920220
AB GB 2264779 A UPAB: 19931122
Changes in characteristics on an image are monitored at a predetermined position or zone (12, 13) of the image. The image is corrected to allow for changes in the monitored position or zone (12, 13) by reference to observed deviation in coordinates of reference points (9-11) of the **image**. Successive **thermographic images** of a printed circuit board may be displayed on a VDU screen (4). Temperature-dependent colour characteristics of the spot or line may be determined by image subtraction to monitor the development of hot spots.
Changes in the coordinates of reference points (9-11) on the image may be noted by a cursor controlled by a mouse and used to correct the positions of successive images on the screen so that the monitored point (12) or line (13) is always in the same position. This correction is achieved by transformation of data using spreadsheet software.
USE/ADVANTAGE - Eg for monitoring hot spots in electrical or electronic equipment etc. and physical structures such as buildings or bridges for failure in insulation, lamination or thermal conduction.
Dwg.2,3/

L27 ANSWER 15 OF 16 WPIDS (C) 2002 THOMSON DERWENT

AN 1990-179501 [24] WPIDS
DNN N1990-139457
TI Locating leaks from underground gas pipes - exploiting thermodynamic behaviour of gas by pressure-changes and measuring temp. difference by **IR thermograph**.
DC Q69 S02 S03
IN LINDLAHR, W J
PA (GASA-N) VEB GASAN MITTEN
CYC 1
PI DD 274870 A 19900103 (199024)*
ADT DD 274870 A DD 1988-318909 19880815
PRAI DD 1988-318909 19880815
AB DD 274870 A UPAB: 19930928
By a gas-leak from an underground gas-pipe, a fall in the temp. of the gas occurs due to the Joule-Thomson-effect. An **infrared thermograph** is used to measure the temp. difference w.r.t. the ground temp., enabling a leakage from a gas-pipe under pressure to be located from the ground surface.
USE/ADVANTAGE - Underground gas pipes under pressure inspected for gas leaks and declared to be safe. Checked from ground level. @ 0/0

L27 ANSWER 16 OF 16 WPIDS (C) 2002 THOMSON DERWENT
AN 1986-329131 [50] WPIDS
TI Solid-**image** sensing device for **thermography** - has semiconductor photo detector to change view angle by selecting photo detecting array NoAbstract Dwg 2/4.
DC U13
PA (FUIT) FUJITSU LTD
CYC 1
PI JP 61245570 A 19861031 (198650)* 8p
ADT JP 61245570 A JP 1985-86833 19850423
PRAI JP 1985-86833 19850423